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ABSTRACT

This document contains speeches and notes of workshop participants assembled to discuss the planning of Colleges of Applied Arts and Technology. The workshop was mainly concerned with learning resource centers, college student facilities, and planning for the future. Thirty-three selections cover such topics as appraisal of college development, learning resource centers, libraries, audiovisual materials, television, educational communications systems, recreational facilities, food service facilities, the college as a student and community center, the campus of tomorrow, building industry in transition, and flexible facilities. (Author/MLF)

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Skyline Hotel
Toronto, Ontario
November 16th and 17th, 1

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SCHOOL PLANNING AND BUILDING RESEARCH
Architectural Services - School Business Administration Branch
ONTARIO DEPARTMENT OF EDUCATION

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OPENING WORKSHOP ADDRESS
by S.T. Orlowski

It is my pleasant responsibility to extend to you this morning a warm welcome to the fourth College Design Workshop. Many of our guests are from Alberta, British Columbia, Manitoba, Quebec, Newfoundland and the U.S.A. I hope that these two days will be beneficial and pleasant to all of us.
This is the final conference organized by the Department of Education, dealing with Colleges of Applied Arts and Technology. As we all know, the Colleges have been transferred to the Department of Colleges and Universities as of the last day of September. I am sure that this new alliance will benefit the growth and development of the Community Colleges and our best wishes accompany them.

Colleges of Applied Arts and Technology came into existence approximately five years ago and the main "architect" responsible for their creation was the Honourable William G. Davis who was at that time, the Minister of Education. The Department of Education recognized the need for Colleges and the wisdom of this move is well proven by the number of graduates who are already active in various fields as technicians, technologists, nurses and so forth. There are many young people who seek opportunities offered by a variety of courses and also many adults who need retraining or simply wish to be intellectually enriched. Enrolments in full or part-time courses are increasing every year and a majority of the Colleges are expanding. There is still another fact worth mentioning - a large majority of College graduates find employment in fields directly related to their training.

Colleges are unique - Colleges are not trade schools and neither are they universities, however the standards they have set and the objectives they have aimed for have proven to be consistently high.

We have had in the last four years, three conferences devoted to the Colleges. They were all well attended by people involved in building, staffing and administering the Colleges. We discussed many different problems and questions. Our Workshop this time is mainly concerned with learning resource Centres, College student facilities and planning for the future.

The Department of Education is deeply involved in planning and projecting for the future as is the Department of Colleges and Universities. Since education to be meaningful must relate to life itself, and as Alvin Toffler has said in his current best seller, "Future Shock" about the new educational revolution: "It is no longer sufficient for Johnny to understand the past. It is not even enough for him to understand the present, for the here-and-now environment will soon vanish. Johnny must learn to anticipate the directions and the rate of change. He must, to put it technically, learn to make repeated, probabilistic, increasingly long-range assumptions about the future. And so must Johnny's teachers".

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And this is what we must attempt at all times. This is also why we proposed some years ago that we should have a type of "early distant-warning system" for economic, industrial and technological change, both regional and provincial, a continuing information service to assist in forecasting change, and an educational policy that will answer that change. This was suggested by us in 1967 and now we are passing this philosophy on to the new Department that will manage the Colleges' interests from now on.

Ladies and Gentlemen, we all have our programs and we know what is expected of us. I hope that this conference will be interesting and fruitful to all of you.

And now it is my pleasure to introduce to you the Assistant Deputy Minister who for the last four years has given Ministerial approval for all College Capital Projects which were recommended to him by Applied Arts and Technology Branch and School Planning and Building Research, Mr. L.M. Johnston.

APPRAISAL OF COLLEGE DEVELOPMENT - Panel Discussion
by H.W. Jackson

"College" is one of the words in the English language which conjure up images in the mind of the listener. To many people, a college is a rolling campus, many impressive buildings with walkways from one to the other, and, more recently, acres of parking lots. Some listeners will go so far as to include people walking from building to building in that image. I suppose such an image is appropriate for a Design Workshop. However, from my point of view, college physical facilities are a means to an end - certainly not an end in themselves. Colleges of Applied Arts and Technology are essentially a community of people with a common interest - an interest in relevant educational opportunities at a post-secondary level.

It is just five years ago that Colleges of Applied Arts and Technology first appeared in Ontario. In fact, the majority of the colleges are just commencing their fifth year of classes this Fall. Unlike the traditional expansion pattern in the university system, Colleges of Applied Arts and Technology were under tremendous pressure to enrol students before there were any adequate plant facilities, and even, in some instances, before a staff and procedures had been developed. This pressure has created a good many gray hairs and quite a few ulcers during the past five years. But the adult population of Ontario has benefited and will continue to benefit from the flexibility and fast response to needs, which have become the key to the success of the CAAT system. From this point of view, we must look at the increasing physical plant facilities of the colleges in terms of their tendency to limit flexibility of response to future needs.

During the first five years, provision of adequate accommodation has been a very significant means toward the educational ends of the colleges. I'm sure that, five years ago, the charter members of the College Boards of Governors anticipated that their Colleges would have fairly complete campus facilities at this point in time. Master Plans were submitted to the Council of Regents.

Most of these were fairly explicit as to the final appearance of the campuses. Most envisioned a building program composed of three or four stages, each stage having a price tag of around $10 to $15 million. This notion was inherited quite legitimately from the pattern used by the Department of Public Works in building institute of technology facilities all in one fell swoop - e.g. The Fennell Avenue campus of Mohawk College of Applied Arts and Technology.

Just three years ago, at the second College Design Workshop at the University of Waterloo, we discussed the consequences of such a concept. If projects were to

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e consequences of such a concept. If projects were to be approved in $10 million bites, about one quarter of the colleges could forge ahead with their master plans, while the other three quarters waited for their turns. All twenty colleges, however, required "permanent" accommodation with varying degrees of urgency. To keep all twenty colleges moving ahead within the flow of capital funds available, it was necessary to adopt the modular concept of college development, with approvals in stages of from $1 to $3 million, depending on the growth rate and need of the particular college.

This concept has turned out to be a blessing in disguise in that we all do, in fact, learn from mistakes and experience. Consequently, phases now under construction are much more relevant to college objectives than if they had faithfully followed the original master plans prepared some four years ago. In appraising college development over these past four years, I think that I should leave the technical consideration of the facilities developed during that period to my panel colleagues, who are much more qualified than I to discuss such topics. I would, however, like to comment in passing on a few points which have been a bit of a concern for those responsible for co-ordinating CAAT development.

Through the college legislation, the Minister of Education, and more recently the Minister of Colleges and Universities, delegated responsibility for initiative in the development of college programs and facilities to local Boards of Governors. In return for this responsibility, and on recommendation by the Ontario Council of Regents, the Minister provides the Board with technical and financial resources, within the limitations of government budgets and political priorities. Up to now, the Council of Regents has had to base its recommendations largely on the data contained in college master plan submissions. As noted, many of these master plans now qualify as ancient history. A more appropriate planning device for the 1970's is the revolving five-year forecast which has been adopted by the Committee on University Affairs, and indeed by all government departments. Some time ago, the Council of Regents advised the college Boards of Governors that the Council would require such annually-updated forecasts of enrolment projections, program changes, and the implications on operating funds and facility requirements of such forecasts. These forecasts will provide the primary data upon which the Council of Regents can advise the Minister on the adequacy to a total provincial system for providing continuing education opportunities to the people of Ontario. The first of these five-year forecasts is due about a month from now.

Related to this topic is a peculiar form of logic that seems to have developed in academic circles during the 1960's, when education topped the list of public priorities. During the 1960's - when CAATs were being planned - the public was constantly being told that education is a country's most valuable resource. This is probably quite true for emerging or developing nations. However, the alarm in the western world when Russia placed Sputnik in orbit led us to believe in the western nations which were already in advanced stages of technological development that there is no such thing as "too much education". It can be shown that the funds which the government spent on the education of veterans returning from World War II were indeed an investment which has been returned to

the country in economic wealth many times over. During the 1960's, it seems to me that this educational investment principle led to a weird corollory which states: "Therefore, the more money the government spends on education, the greater the return in investment in national growth".

There are still signs of some of this reasoning in the capital requests from colleges of applied arts and technology. Some instructors will insist that they cannot possibly provide a "quality" education without facilities which are fully-equipped with the most sophisticated gadgetry available on the market. And there are still some members of boards of governors who believe that facilities available in a neighbouring college have no bearing on a board's responsibility to provide for all local needs right on their own Main Street. I do not think that the old bird-in-hand-worth-two-in-the-bush addage has any place in college planning. In jurisdictions to the south that have been in this post-secondary education field for a few more years than we have, we can find repeated examples of laboratories which were fully equipped less than ten years ago. Today, many of these labs are obsolete. Yet, because of the high initial investment, replacement of this gold-plated junk must of necessity rate low in current priorities.

During the past year, there has been appreciable concern expressed by the public - particularly among those who do not see themselves as receiving any direct personal benefit from college education opportunities - that the colleges have been spending money on gadgeting for the amusement of staff and student with no concern for duplication of existing resources. Hindsight is one of the most precise of sciences. I am sure that every college has a list of things that it would do differently, if it could turn back time and start again. The important point is that we do not ignore experience in planning future priorities. For the past two years, Ontario universities have been on an interim formula for capital assistance which evaluates square feet of facilities against enrolment. Some universities are entitled to no further assistance until enrolment catches up to present space. It should be noted that total space includes non-instructional areas such as cafeteria, gymnasia, boiler plants, lounges, staff offices, etc. Colleges of Applied Arts and Technology have received capital support in terms of sharing the total amount set aside by Treasury Board each year. The division of this total among the twenty colleges is based on enrolment growth, facilities inherited from former provincial technical institutes, the urgency for vacating leased temporary facilities, etc. I would hope that we can maintain this flexibility in assignment of capital funds for a few more years until each college reaches a basic level of accommodation. Nevertheless, all assignments of capital aid during that period will be made with the knowledge that Colleges of Applied Arts and Technology will probably be included in a capital support formula mechanism in the not-too-distant future. This probability should certainly be kept in mind by boards of governors in planning their capital project priorities.

A second anomaly in public reasoning which affects CAAT capital projects is that there is no similarity between a tax dollar, or dollar of public funds, and the dollar of disposable income which one may spend or not spend at the local shopping plaza. For example: most staff members of colleges of applied arts and technology came

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from employment in business and industry where lay-offs resulting from economic changes were quite accepted. However, a peculiar transformation takes place when one becomes an educator supported by public funds. If the staff requirements of a college change due to changes in enrolment, changes in federal purchases of adult retraining, improvements in efficiency dictated by the impartiality of formula operating grants, the same people feel that a full-scale public enquiry is their natural-born right before a lay-off can occur.

Some of the same fuzzy logic applies to capital building programs financed with public dollars. Consequently, not only must boards of governors take care that their tendering procedures are completely impartial, but they must also bend over backwards to ensure that it is abundantly clear to all that the board is absolutely fair and impartial in its spending of the public funds entrusted to it. This particular fact of public life often tends to frustrate the innovations in procedures developed by the colleges in all good faith in an effort to obtain more mileage from the tax dollar. The price of democracy could very well in some instances be mediocrity.

Messrs. Orlowski and McCullough may wish to elaborate on this point -- so I shall settle for a few brief comments in passing. The open stipulated sum tender is universally accepted as an impartial method of awarding contracts. Consequently it is department policy to insist on this procedure whenever possible -- certainly on all projects exceeding $1 million. Some boards of governors, in their earnest desire to ensure that the tax dollar is well spent, employ prequalification on tendering. Again, I should note that some contractors feel that there should be different standards for pretendering when public dollars vs. private dollars are involved. Pretendering procedures, when used, must be carefully spelled out step by step and scrupulously followed. Even so, I know of no way of shielding boards from many unwarranted headaches that such procedures sometimes generate.

The management contract procedure has, generally, served the colleges well during the past four years when time was a very precious quantity in a system where students preceded accommodation. I am not convinced that this procedure saved the public purse any dollars. However, I believe that the colleges did probably get more mileage from the capital dollar in terms of "extras". I would hope that the hectic deadlines on the past four years are no longer necessary. However, it seems to us in the Department that the colleges plan flow charts for tendering that allow for a 48-hour turn around of CAAT Form approvals by the Minister after having spent many months on previous steps. I would suggest that the increasing demand for accountability to the public on educational expenditures is going to slow down somewhat the instant approval service to which the colleges have become accustomed.

In theory, the "builder proposal" technique should permit a saving in capital spending on college facilities. When public dollars are involved, it is essential that all interested builders should have precisely the same understanding of what the requirements of the college are. This may be possible for mass production of housing. But, to date, it has not been possible to demonstrate this complete equality of opportunity -- particularly when colleges attempt to save a few more dollars by using their own staff to write the specifications. A couple of experiments

to date in the CAAT system with this Technique have produced more problems than benefits. Consequently, until the procedure is more universally acceptable, the department is not able to consider this form of tendering.

Having aired a few pet peeves on past college physical plant development, I think I should conclude with a few brief comments on what I see as the significant changes that will affect the capital building program of colleges of applied arts and technology during the first half of the 1970's.

The primary objective of colleges of applied arts and technology has not changed during the past five years:

> To meet the continuing education needs of secondary school graduates, adults, and out-of-school youth of the communities served by the colleges.

What has changed appreciably, and is still changing, is the public concept of the continuing education needs of the community. If the relevance of colleges of applied arts and technology is measured in terms of the employment record of the young adults graduating from full-time programs, then the colleges to date, have been quite successful. However, the public interpretation of "continuing" education is changing. When colleges of applied arts and technology first opened their doors, the usual translation of "continuing education" was that everyone should strive to continue beyond secondary school to complete a college or university program which would set the individual up for the 30 years or so of satisfying employment, which is sandwiched between school days and retirement.

The first real break in this concept occurred during the past year when the public suddenly became aware of an increasing number of "educated unemployed". I think the next few years will see an increasing trend toward the "cafeteria" or "super-market" concept of post-secondary education - particularly in community colleges. Adults of all ages will come to the colleges to make a selection of courses which are relevant to their immediate needs, whether vocational or social, - knowing full well that they can come back when they get hungry again. This "in-and-out" pattern of further education will increase the number of part-time students attending the colleges. Although full-time enrolment in the CAATs is still increasing, in absolute terms, the rate of full-time enrolment rise is already diminishing significantly. From 23% in 1970, to 17% in 1971, and a forecast 13% in 1972. Extension enrolment in the colleges, on the other hand, is increasing at a significantly accelerated rate.

There are several byproducts of this "cafeteria" concept:

1. More young people will take a one or two-year experience break after graduating from secondary school before they continue with a college or university education. Already there are signs of this trend in the shortfall in university enrolment this Fall. The educational system cannot function as a holding tank to keep these young people off the labour market indefinitely.

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stem with this Technique have produced more problems
quently, until the procedure is more universally acceptible,
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peeves on past college physical plant development, I
e with a few brief comments on what I see as the significant
t the capital building program of colleges of applied arts
the first half of the 1970's.

of colleges of applied arts and technology has not changed
ars:

the continuing education needs of
y school graduates, adults, and
chool youth of the communities
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reciably, and is still changing, is the public concept of
on needs of the community. If the relevance of colleges
hnology is measured in terms of the employment record
duating from full-time programs, then the colleges to date,
sful. However, the public interpretation of "continuing"
. When colleges of applied arts and technology first
usual translation of "continuing education" was that
to continue beyond secondary school to complete a college
which would set the individual up for the 30 years or so
nt, which is sandwiched between school days and retirement.

this concept occurred during the past year when the public
of an increasing number of "educated unemployed".
ars will see an increasing trend toward the "cafeteria"
cept of post-secondary education - particularly in community
l ages will come to the colleges to make a selection of
vant to their immediate needs, whether vocational or
well that they can come back when they get hungry again.
rn of further education will increase the number of
nding the colleges. Although full-time enrolment in the
ng, in absolute terms, the rate of full-time enrolment
hing significantly. From 23% in 1970, to 17% in 1971,
972. Extension enrolment in the colleges, on the other
a significantly accelerated rate.

ducts of this "cafeteria" concept:

people will take a one or two-year experience break
ing from secondary school before they continue with
niversity education. Already there are signs of this
hortfall in university enrolment this Fall. The educational
ot function as a holding tank to keep these young people
r market indefinitely.

Governments will have to find meaningful employment opportunities for the young secondary school graduates.

2. From this it follows that there will be less tendency for young people to go to college or university "to find themselves". I see, therefore, a decline in interest in the G.A.S. (General Arts and Science) program in the colleges. This should certainly appeal to that aspect of community thinking which is rearranging -- through its elected representatives -- the order of priority for the spending of tax dollars. Education no longer occupies top spot in any such list.

3. Even though credit requirements for degrees and diplomas are becoming more flexible, I think that "super-market" concept of continuing education will eventually minimize the significance which the public attaches to degrees and diplomas as ends in themselves, or even as means to career or social ends.

The college which, in my opinion, will be judged as relevant by the mid 1970's will be the one with the flexibility of attitudes, programs, schedules, and facilities to adjust to these changing community needs. I believe that all these anticipated developments indicate a diminishing emphasis on the hardware of the laboratory and an increasing attention to the software of the resource centre. I think it is quite appropriate that this fouith CAAT Design Workshop should devote the major part of its time to colleges of applied arts and technology as community learning resource centres.

APPRAISAL OF COLLEGE DEVELOPMENT - Physical Facilities
by S.T. Orlowski

From a very small beginning only four years ago, the college system has grown to a complex of over 9 million square feet with more than 100,000 student stations. It is a remarkable record of growth and development by any standards. Growth and numbers tell only part of the story, even more remarkable is that in the vast majority of cases, we have planned wisely and economically.

The first problem confronting most Board of Governors was where should they LOCATE THESE NEW INSTITUTIONS and what would appropriate facilities be for this new educational "animal".

The necessary haste led to some interesting and exciting innovations. For the first time, educational institutions examined the available building stock in the community and realized that shopping centres, factories, existing office buildings, etc., could be utilized for college purpose and indeed serve the function of community service and integration better than the isolated purpose built campus.

The idea of renting college space especially for the use of manpower students was widely adopted. Leased space is truely flexible space - it can disappear from the college inventory when it is not needed. At present the colleges lease some 1,900,000 sq.ft. providing space for almost 24,000 student stations.

All colleges decided that a MAIN CAMPUS was needed. Considerations of initial economy weighed heavily in site selection. Too frequently campuses proved to be difficult to reach by public transportation. As a result of the need to use private automobiles to attend these colleges, a number of our campuses remind me of shopping centres isolated in a sea of parked cars. I can't help wondering if our policy of subsidizing the private motorist instead of considering means of improving public transportation in the area is in the best interest of the colleges and if it is consistent with our aim of community service.

The BOARDS OF GOVERNORS of the colleges have been entrusted with the planning responsibilities and in my experience the creation of the college complex has been of particular interest to and concern of the Board of Governors. Naturally, the physical development of colleges has involved the close co-operation of all the presidents.

Although I can well understand the involvement and interest of the presidents in the development of the campus, in some cases, I can't help feeling that the presidents have assumed too much personal responsibility. The development of a multi-million dollar complex requires the exclusive attention of a highly

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qualified professional architect or campus planner on the college's administration team.

Long-term forecasts of student enrolment and financial planning need to be co-ordinated with the physical development plans to ensure that funds and space are utilized to the maximum.

Conditions in all campus locations MUST be considered and the needs of students on auxiliary campuses should not be sacrificed for the development of the main campus.

All colleges have now completed master plans. These documents must not fossil future campus development. The colleges should continually work with their consultants to keep the master plan flexible and responsive to changes in education and college philosophy.

The college planner needs to have a good working relationship with their consultants. Consultants are hired for their expertise. Development of architectural schemes must be a team effort between the colleges and their consultants. I feel that it is vital that the widest possible representation from college administration, staff and students should be made at the initial stages. It is the responsibility of the college's own staff planner to codify these suggestions, to establish priorities and to transmit this material to the architect and engineers entrusted with the actual physical planning. On behalf of your consultants, I want to stress to the colleges that you must know what you want, why you need it and what your budget is at the initial planning stages. Failure to clearly define your goals and financial position at the outset will only ultimately delay the completion of the project and lead to frustration, ill feeling and therefore a compromised scheme.

There is a difference between sound FINANCIAL PLANNING by the colleges and short term initial economies on specific projects. Of course, governmental policy necessitates economical building, but also it makes responsible development imperative. The colleges do not have adequate staff, bonding and insurance to undertake building schemes on their own. When colleges try to act as their own architects, engineers, or contractors they undertake to assume all the legal responsibilities which would normally be part of a consultants service. In case of errors, omissions, or accidents, the responsibility would ultimately pass to the Ontario Government, who in the eyes of the general public would be hard pressed to convince the injured parties that adequate care and protection had been exhibited.

In comparison with other institutional building costs, in general, I am pleased with the economical manner with which we have built the colleges. Our record in terms of building within budget cost has been good.

We pioneered the introduction of MANAGEMENT CONTRACT on Ontario Government work in order to speed the construction of facilities and in hopes of involving with the construction industry a more economical method of building. Our record in speed of building is excellent, however, in comparison with the stipulated sum form of contract, management contracting has not proven to produce any significant economies. From our vantage point of an overview of all colleges development, we have concluded that the management form of contract offers no advantages on jobs of less than $1 million. Since on smaller jobs it is feasible to complete working drawings prior to tendering, we have advised the use of stipulated sum contracts.

Some colleges have tried experiments with contractural procedures other than management or stipulated sum contracts. Unfortunately, none of these experiments have been successful. Although the colleges entered into these experiments in hopes of achieving economies, none have been realized. However, what was reaped was an unwanted harvest of ill-feeling and criticism of college administrative procedures. The cost in terms of man hours within the college and the Department because of such procedures has been enormous. As a result of these unhappy experiences we have asked the colleges only to use management or stipulated sum contracts.

We also feel that savings in terms of consultant fees are false savings. The architect relationship with the college should be that of the family doctor - one who knows and understands the needs of their client and therefore can prescribe the correct prescription for that particular college problem, not only in terms of immediate evident systems, but also to ensure the long term healthy operation of the physical facilities.

I like to think that the Department of Education, and of course, in particular, SCHOOL PLANNING AND BUILDING RESEARCH have made a positive contribution to the development of the colleges. In the early stages we evolved the CAAT form procedures for requesting government funds. We endeavoured to keep the procedure simple, to minimize paper work and to only ask the colleges to provide data which really would be used in the analysis of proposals and overall college development.

As the colleges developed we found (together with APPLIED ARTS AND TECHNOLOGY BRANCH) that the CAAT forms needed revision to meet current departmental information requirements. We co-ordinated our request FOR SPACE INFORMATION with the twenty-one space categories established by the Systems Research Group. Quite frankly, this is one area where we ask for more information than is absolutely necessary. The reasoning behind S.R.G.'s elaboration of data concerning support spaces has always escaped me, especially since this type of space represents such a small percentage of the total area.

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I think that our co-ordination of space data with the S.R.G. system has led to some confusion in the colleges. School Planning and Building Research have worked with the Departmental Educational Data Centre and the Applied Arts and Technology Branch to computerize all our records concerning capital expenditures. All historical costs of land, building and equipment have been recorded and all on-going applications for funds are automatically recorded by Department employees. We need to know not only how much money we have spent, but also on what we have spent that money, what is the nature of the space we have acquired. In order to co-ordinate your information gathering work, we have asked for the data on space in terms of the 21 S.R.G. space categories. Since our record system also includes data on projects under construction and in the planning stages in reality we have a more complete picture of the space needs of the colleges than that provided by the S.R.G. system. The data on costs and college space in our records is used to analyze a college's request for funds on the basis of present stage of development of that particular college and in comparison with overall, or selected averages of other colleges. The data base is also used to generate on-going reports of college expenditures and to determine future college budgets. Our experience in working with the Educational Data Centre has been a particularly pleasant one. We found that they have been concerned with providing a service which met our information needs, not in trying to bend our requirements to a pre-determined system. I would like to point out that this tremendous job of data collection has been done in one year by only two of my staff members and I would like to thank the college officials for their co-operation in this work. The system has proved to be so successful that it is being extended to the secondary school building records and eventually will include all the elementary schools as well. When this work is complete, we will be able to analyze capital educational expenditures in Ontario on a common basis. Also, in case of emergencies, such as hurricane Hazel, we will be able to accurately report on the dining capacity of all educational buildings within a given area of the province.

The data shows an interesting profile of college development and confirms our subjective impression of economical and efficient development.

1. COSTS

Average Gross Costs (buildings, loose equipment, site development & fees) for all 20 Colleges

	$/Sq.Ft. G.F.A	$/Student Stn.
Permanent Buildings Owned by Colleges and in use	$34.61	$3.766
in approx. range	$21.60 to $44.98	$2.250 to $5.450
Semi-Permanent or Pre-Engineered Buildings Owned by Colleges and in use	$18.97	$1.601
	$14.93 to $26.24	$1.016 to $2.700

2. SPACE

Teaching space (i.e. classrooms, laboratories, shops, audio-visual and computer areas), expressed as a percentage of the total net area for all types of buildings in the 20 colleges = 41.84% in a range from 28.04% to 53.34%.

I hope we have been of assistance to the colleges in other less formal ways. I and my staff have been personally interested in observing the growth of colleges. We have offered advice and guidance to college officials and to your consultants. We have felt that this has been a warm and productive working arrangement. We have tried to ensure that as the colleges grew we would have twenty unique nstitutions. We have deliberately minimized our formal guidelines for college developments, rather we have tried to respond to the particular requirements of each college and relate our advice to the particular problems of the stage of the college development.

My advice for your FUTURE GROWTH is to clearly define your goals, know where you are heading educationally, define your needs in terms of programs and then trust your architects and engineers to translate these educational requirements into a physical reality. Our most successful campus developments are where this spirit of co-operation has prevailed. It is a partnership of responsibilities; the college must determine its institutional future, but to the architect to advise on these matters. In order to ensure that future development is as economical and efficient, priorities must be established on the basis of clearly documented educational need. The alluring appeal of contemporary educational hardware must be critically examined in terms of educational benefit. Do all colleges really need elaborate television studios and complex computer installations? How many times are our desires to acquire these facilities justified in terms of educational benefit and future employment potential? Or are we apt to be a bit like grown children with our noses pressed to the store window with the model railway display? Clarify your goals, establish your priorities, plan your growth in terms of students, funds and space and then trust your architect and engineers to translate your hopes and aspirations into an exciting physical reality which will serve your students' educational needs and excite their imaginations by pointing the way towards a better physical reality for Ontario.

APPRAISAL OF COLLEGE D
by J.D. McCullough

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APPRAISAL OF COLLEGE DEVELOPMENT
by J.D. McCullough

Since this discussion is supposed to concern an appraisal of the development of the Colleges so far, I'm afraid I'm going to have to exempt myself as any sort of an expert on that particular subject and speak rather as a disinterested spectator - a spectator who has been very much involved in the parallel development of the Universities of Ontario at the same time. Although I will be involved in the future development of the Colleges, at this point I am refeshingly ignorant of the wheeling and dealing that has taken place so far in order to get the Colleges where they are now. Therefore, if any comments seem to imply any sort of criticism of any one or of any particular method or way of doing things, I assure you that this is not my intention. I will claim total ignorance. I hope you'll forgive me if I happen to drift from the subject of Colleges so far to a discussion of possible future directions for Colleges and Universities and perhaps a few words about recent shifts in the direction of University development.

First, let me say that I think the development of the Colleges to this point in time has been exceptional and outstanding. At the beginning there was a job to be done by diverse groups of people all over the Province, in all sorts of locations for all sorts of different reasons. The job has been done and the job has been done with various degrees of success but I think, overall, with considerable success. The way in which the job was done, the approach that was taken, I think is the most outstanding feature and one on which I would like to dwell for a few moments.

The initiative, the resourcefulness, the imagination, that was brought to the problem in the beginning was truly remarkable. In my opinion it's just that initiative, resourcefulness, and imagination which we must continue to bring to the problems of providing physical resources for Colleges and Universities. They must not be allowed to be replaced with the age-old reliance on money and the established ways and means of doing things. The renting of space, the use of old factories, old schools, pre-fabricated buildings, leased quarters, all the ingenious solutions that the Boards of Governors and their planners came up with when the Colleges were born are still valid today. In an era where change is the only certainty, it would seem to me that such solutions are far more valid than the creation of immoveable piles of bricks and mortar designed to last for 50 years. Before anybody accuses me of saying one thing to the Colleges and another to the Universities, may I hasten to assure you that on many occasions I have given them the same message. I think it would be regrettable if the Colleges at this point in their young lives should pick up the bad habits that the Universities have acquired over many hundreds of years.

In that connection perhaps I'll be forgiven if I digress a bit to inform those of you who don't already know how capital support has been administered to

the Universities. The Universities now receive funding on a formula basis for capital projects. Entitlement is directly related to enrolment projections. Enrolment projections are weighted by the various courses and year of study. To these weighted enrolments are applied units of space. Thus cumulative total space needs are calculated for a number of years. From these total space needs is subtracted the existing space and new space needs are thus calculated. To these new space needs is applied a unit cost and a cumulative dollar entitlement is calculated for a number of years. It has been this Department's policy then to allow the Universities to determine their own priorities within that dollar entitlement. The sort of building they wish to build, the type of building and the cost to a certain extent - all should be determined by the University. However, the University must work within the dollar constraints as determined by the Government.

This, of course, requires that the University achieve a great deal of expertise in determining their destinies. Further, it requires them to retain the very best professionals they can to see that the facilities they build are the proper facilities and that they are designed properly. This is the decentralized management concept that the Department of University Affairs followed and it is altogether likely that a similar approach will be taken as it concerns the Colleges. This will require that the Colleges acquire the necessary expertise and the necessary inhouse capability of determining priorities and most importantly of enunciating physical needs as they relate to academic needs.

This brings me to another subject that is dear to my heart and that is the translation of an academic programme into a programme of physical requirements. From the beginning the Architectural Services Branch of the Department of University Affairs felt that any assessment of proposed facilities could best be made in a pragmatic context rather than the old, tedious looking at drawings approach. It therefore urged the Universities to develop skills in programming. The programmes then formed the basis for any analyses, assessment and approvals.

What is a good programme?

A good programme is a matter of fact - not design.
A good programme is oriented to three basic needs of the clients: for human amenities, for operational efficiency and for orderly growth. It objectively defines present and future functional requirements by a systematic analysis of all factors relating to personnel and enrolment, growth and individual work space standards. It considers special equipment and services, communication, adjacencies, and work and traffic flow. A thorough programme also includes a determination of the shared facilities for parking, food service, meeting and training requirements, as well as special activities such as laboratory and electronic data processing installations. The end product of the programme is information - not design. It is a coherent, meaningful compilation of the facts

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needed to create facilities which will most effectively support the Colleges' operations and academic goals. A good, objective programme should neither limit nor dictate design. It should permit wide design latitude and provide necessary criteria against which the architect can assess the validity and viability of his design solution.

A good programme eliminates the possibility of omissions which pose increasing dangers to budgets and schedules as the job proceeds. The programme document itself should be a comprehensive report that presents in text and in tabular form the detailed quantitative and qualitative requirements of the College as it concerns a particular project. The recommendations should include functional space standards, department-by-department space analysis and suggested organizational groupings which respond to adjacency, work and traffic flow requirements. Guidelines for accommodating future growth in an orderly manner while preserving these interrelationships should also be included. In its format and terminology, the programme document should permit all concerned to understand, abide by, and implement its conclusions.

We have found there is, however, a danger in such good programming and in such proper enunciation of needs. Some Universities and building committees have examined their needs so thoroughly that many times spaces have been designed to serve one fixed function. I think we all agree that the day of the fixed function space is rapidly disappearing, at least I hope we do. The Government and the taxpayer can no longer afford sophisticated spaces that can only perform one specialized function. In this connection you might be interested in a study we are about to undertake as part of a total systems study. The study will be an analysis of users' needs.

We wish to take a very thorough look at the prime users' needs in the College and University setting. We'll examine the function that must be performed in the Universities and Colleges and relate these functions to various performance specifications of buildings, in order to determine, for example, what structures can satisfy 70% to 90% of the prime users' needs; what atmosphere can satisfy the same needs, what sound control, what lighting level, what column spacing, what floor loading, and so on, so that it may be determined as closely as possible what common building elements satisfy most prime users' needs. We'll do this so that we can perhaps come up with a systems approach which will allow for a sort of combination of elements (a system) which would be adaptable over a number of years to 90% of the total needs of a University or a College. Our next step would then be to relate these common elements to existing hardware. What hardware exists that will satisfy these performance specifications. I feel quite sure in saying that there are probably many, many systems and sub-systems which now exist which will satisfy those prime user needs. In other words, there's no real need to build a special building for a special function every time we go to the drawing boards.

It is rather ironic that perhaps we brought this problem on ourselves by insisting

that the University enunciate their needs so well and examine their requirements so thoroughly that the usual result was a fixed function space. I am very much convinced that structures and environments now exist which can be leased in downtown Toronto which can satisfy 90% of the users' needs of a University or of a College, certainly for a University. For example, take the office building that we happen to have our offices in. I know that a seminar can be conducted in there as well as I know that philosophy, psychology and so on could be taught, a library could be put in then, as well as a dining room, a student union, administrative offices, tutorial offices, and so on. It would be a little difficult to have an automotive shop perhaps but I am sure the floor loading would take it, I am sure the column spacing is O.K., I am sure the environment itself is O.K., its probably just a little too fancy for an automotive shop and there are probably not enough services installed to accommodate the automotive shop function. However, the other functions I did mention could be accommodated in the Mowat Block and I should say right here and now that we have no intention of creating any more Mowat Blocks anywhere in the Province. And if anybody asks for the square foot price of the Mowat Block they are going to have to go to the Department of Public Works.

I don't want to take up too much time but I would just like to say that I have the very comfortable feeling that I'm inheriting not only the Colleges of Applied Arts and Technology, but at the same time I'm inheriting a mutual trust and a very high respect which has been more than earned by my predecessors and probably most notably the man who organized the workshop today, Stan Orlowski, and his very capable assistant, Joan Simon, and the people with whom they work: John Peng, Peter Harris, Fred Mueller and Terry Montgomery. I want to tell them publicly how very grateful I am for the goodwill, the friendliness and the trust that they have passed on to me from the Colleges and I will make them a promise right now that I do not intend in any way to jeopardize all the years of very diligent effort and concern that they have given to the College development. I intend to build on their strengths and I hope I can reassure the Colleges that the same attitude of serving will be brought to capital support for the Colleges in the future.

I look forward to the next few years of development in the Colleges; that there will be economic constraints, more rigid economic constraints, there's absolutely no doubt at all - I've had the word already that money is going to be extraordinarily and extremely tight. This does not really worry me. I think the Colleges and Universities have people within them right now who are capable of getting the job done on whatever resources the taxpayers feel are adequate. Its unfortunate that the golden days of education perhaps are over, in a way its unfortunate, but at the same time I think maybe the results we're going to get in the next few years of College development are going to be even more noteworthy than the results we've already had. I certainly intend to pledge the support of this Department right now to that end.

I thank you very much for listening to me today.

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LEARNING RESOURCE CENTRE
by Mrs. M. Beckman

I Introduction

Although I was particularly familiar with two of the Colleges of Applied Arts and Technology in Ontario, in preparation for my participation in this Workshop, Education and Architecture in the 20th Century, I visited several more of the colleges, and talked to many more of their librarians. In the past few weeks I have watched students crowd into audio-visual carrels, and line up 3 deep around reference desks; I have seen students working on the floor because all study spaces were taken. Moreover, I have watched library staff operate inefficiently, due to ill-considered library designs, - inadequate floor loading so that stacks locations are limited; duplicate staffing of circulation points because of uncontrolled exits; inadequate and poorly placed work spaces.

The overall impression gained has been that of a lot of very enthusiastic, but unsophisticated students - students who want to use the library resources, but who need a great deal of help to be able to do so effectively; students who need a wide variety of resources and facilities, from private studies to group study rooms, in which to use those resources. My impression is also of understaffed and overworked librarians and library assistants, maintaining inadequate hours, and providing only a limited number of the services which they are capable of giving.

And yet, turning to a document which defines the role and objectives of the learning resource centre within the College of Applied Arts and Technology, I find a different picture. Let me quote from the Brief Submitted to the Commission on Post-Secondary Education in Ontario, by the Committee of Presidents of the Colleges of Applied Arts and Technology.

"The emphasis in education, therefore, has shifted steadily from concern about motivation and prescribed curricula to the provision of an environment that allows the learner to discover for himself."[1] "The main educational building of the future should be the resource centre, housing resource people, libraries of books, T.V. tapes, audio tapes, 16mm film, 8mm film, 35 mm slides and strips, microfilms, recordings, art works, musical instruments, newspapers, magazines, scientific collections of various kinds, and any other available stored information. Colleges should begin now to build a strong nucleus for the resource centre of to-morrow."[2]

If the learning resource centres of the colleges do not quite match the description just quoted, and I suggest that they don't even begin to approach that role, it would appear to be a matter of priorities and planning. For while the libraries of degree granting universities receive from 7 to 10 per cent or more of the total

institutional budgets, the learning resource centres of the colleges have received from 2 to 3 per cent of the college budgets. And while many of the new universities have started their building programs, by planning libraries - witness Brock, York, Guelph and Trent - the learning resource centres of the colleges have begun in temporary quarters and have been moved, some as many as three times, before space specifically designed is considered necessary.

Placing first priority on library or resource centre planning can be almost as dangerous, however, as placing no priority. First priority in university library planning has far too often led to monumentalism in library design at the sacrifice of function.

The Board of Governors may be pleased with a startling or innovative concrete structure, but they, and the tax-payers, will be paying the bill for higher operating costs caused by the inefficient relationship of library functions, with inconvenience to both staff and user.

The Colleges of Applied Arts and Technology have the opportunity, then, of implementing the recognized priority of learning resource centres within the college environment, without adopting some of the inefficient and ineffective characteristics of many of the new Ontario university libraries. Easily identifiable planning procedures should make it possible to achieve learning resource centres which are both functional and aesthetically pleasing.

After a brief overview of library planning I would like to give some practical examples of the importance of function as a base to planning learning resource centres.

II Planning Procedures

1. The planning team

Formation of a planning team should be the first step in planning a learning resource centre. "Included on this team should be representatives of all groups in the college who are or who will be involved with the administration, design, or use of the new facility."[3]

This would include:

(a) a representative of the faculty;
(b) a representative of the students;
(c) the chairman of that department responsible for the College physical resources;
(d) the librarian;
(e) a library building consultant, and,
(f) the architect.

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architect.

The presence of the architect at this early stage of building planning may be questioned. I would like to answer this by quoting from David Scott, an Ontario planning consultant:

"Another curious habit is the carrying out of the programming for a project without the architect's participation. This is probably the most critical phase of any project, and the one most commonly done badly. To eliminate the contribution of the architect at this initial stage is to cripple him, and to settle for less than should be expected in exchange for his fees."[4]

The participation of two other members of the planning committee should also be stressed. The need for the librarian on the planning team should be self-evident, but unfortunately does not always seem to be. The modern librarian, qualified with both academic and professional degrees, is responsible for administering a complex function, which involves the selection, acquisition and processing of such differing materials as books and film loops; for organizing a diverse staff to provide service on an extended shift schedule; for relating the defined needs of faculty and students to services which the library can provide; and for controlling a management system which designs, evaluate, and coordinates these services. Since it is essential that the Planning Committee is fully aware of the complete spectrum of the learning resource centre's responsibilities, it is necessary that the Librarian serve on the Committee, and articulate the learning resource centre needs for that particular college, in terms of what a library or learning resource centre is, and what a librarian and his supporting staff do.

Since many librarians have never had to face the problems of planning a new library or resource centre, a library consultant can be of great assistance to the Planning Committee, by providing assistance through the clarification and identification of those aspects of librarianship which can be influenced by new facilities.

In the case of a librarian well versed in planning it is still valuable to have the advice of a library consultant; he can provide a balance, as well as knowledge of other libraries and resource centres, or of new technologies.

Speaking at a Library Consultant's Seminar held at Rutgers University in 1968, Robert Gutman stated:

"In the reports of library building institutes it is somewhat distressing to discover how much attention is given to questions of building structure, ventilation systems, stacking methods, entrance lobby designs; and how little criticism is levelled against new buildings because they have failed to deal in an original and creative way with the question of a library's purpose, the kinds of population it should serve, or how it might encourage people to use the library who otherwise ignore it."[5]

It is this latter task - defining the objectives of a particular library or resource centre, and identifying the users and his needs - to which the Planning Committee must apply itself. Nor need the Committee work in a vacuum. There should be visits to other college learning resource centres, to university libraries, and discussion with other colleagues.

In determining objectives the Committee should be guided by such documents as the recent statement of standards for two-year college library learning resource centres proposed by the Association of College and Research Libraries and the American Association of Junior Colleges.[6] These guidelines suggest that the library learning resource centre should provide the integration of all resources necessary to provide maximum support for the curriculum, meeting the varied needs of both faculty and students, as individuals, or in classes.

It is the particular responsibility of the librarian and/or the library consultant to identify the functions within the learning resource centre which will be required to fulfill the defined objectives and user needs. The particular relationships of these functions must also be established, so that an efficient and effective service will result. It is at this point that consideration should be given to the implications of new technology - on the library service, on the system, and on the staff which provide them, and on the facilities which will be necessary in the centre.

The Committee should also give attention to a very important aspect of building planning, measurement standards. These include not only recommendations from recognized authorities such as Metcalf, e.g. 10 volumes per square foot, 25 sq.ft. per student station,[7] but also the kind of strictures now being imposed by various government departments. The State of California, for example, dictates exactly how much space per student, per book, per map case, per circulation clerk, can be allowed in a library, and their building grants are allocated accordingly.[8] Complete understanding of government standards applicable in a particular situation will allow the Planning Committee to define their space requirements quite accurately, so that the architect will not be hampered in his design at a later stage.

Although the librarian may initiate much of this analysis of library service, functional relationships, and standards of measurement, it must be emphasized that this work is done through the Planning Committee, so that the design parameters which are being established reflect the understanding and feeling of the entire planning team.

The final step, with objectives crystallized, functions defined, relationships determined, and indicated on a "blob diagram", with sizes, numbers, and measurement standards accepted, is the writing of a library building program. This program should be written for a one room addition, or for temporary quarters, as well as for a final learning resource centre.

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Very briefly, the building program presents a synthesis of college policy for its learning resource centre, and it outlines the specific details and basic assumptions which will enable the architect to capture the philosophy of the centre, as well as its physical requirements. The program should contain:

- "a summary of essential elements such as size, space, cost;
- the philosophy of the learning resource centre as defined by the planning committee;
- a description of various areas and functions, and of the staff who provide service in them;
- space requirements and the measurement standards used.
- design and location criteria;
- an estimate of costs;
- facility sheets for each area;
- performance statements such as ceiling height, load bearing, lighting requirements, etc."[9]

Using the written program developed by the Committee, the architect can now begin the design process. If the Committee has done it's job well, a functional and effective learning resource centre will result.

III. Functional priorities.

There are many examples in new college and university libraries in Ontario, Canada, the United States, or Europe, of the results of the lack of emphasis on the priority of function in the planning of libraries or learning resource centres. Time permits me to illustrate only a few.

1. User facilities

One of the main functions of a learning resource centre is to provide space for readers. Analyses of user needs have shown that most students prefer individual study carrels, and one of the prime requisites is adequate light. And yet I have seen examples of:

(a) Multi-station tables in a large room with no carpet, lit entirely by light introduced by skylights and incandescent bulbs more than 20 feet above. The foot-candle reading on the work surface was approximately 15. (Absolutely minimum is 50, and 75 foot candles is recommended[10]).

(b) A single station carrel built to fit under the exposed concrete structure of the building - a cosmetic effect. Only two things were wrong with the station: a student couldn't lift his head without hitting the concrete beam, and there was no light on the work surface.

(c) A very attractive study carrel with generous work space, self-contained light, and acoustic control through use of carpet. The whole purpose of the carrel was spoiled however, because the back of the carrel was formed of book stacks, so that the distraction of students selecting books, or library staff shelving them, made the carrels unsuitable in busy periods.

2. Transportation

If a library or learning resource centre is on more than one level, a method of transporting both books and people from one level to another, within library control, will be necessary. Unfortunately, in libraries in Ontario there are examples of:

(a) a two level library with no access to the second level book-stacks without going to a stairway outside the resource centre. The staff carry arm loads of books up and down, since the elevator was eliminated as an economy move.

(b) a stairway as the only access to the book stacks, so narrow that only one student (of 1,000) can go up or down at one time.

(c) an elevator for transporting books in a seven level library so small that it is impossible to get both book truck and staff member inside at one time.

3. Collection Space

As well as space for users in a resource centre there must be space for the collection of books, cassettes, or micro-forms. Book stacks work best when they are placed in ranges of six sections, with aisles of approximately three feet, and lighting in the aisles. They must also be capable of expansion, since collections, even in resource centres, have tendencies to increase. Unfortunately, the concept of round libraries or resource centres appears to be attractive to architects. As a result we have:

(a) stacks with aisles so narrow at the inner ring of the circle that it is difficult to navigate a book truck; or,

(b) completely wasted space at the perimeter of the same circle.

(c) the waste of time in attempting to find books in the maze created by circular book stacks can only be mentioned.

4. Book processing

Although most books purchased for the community colleges in Ontario are processed by the College Bibliocentre in Toronto, some books and many other materials must still be processed in the individual resource centre. Lack of planning for efficient work flow in the technical service space of the library or the resource centre can result in operating costs so high that direct service to users will have to suffer. The relationships of the various library functions

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are also of prime importance in this aspect of the centre design. Catalogue and acquisition departments on a different floor from the card catalogue can result in either:

(a) the necessity for a duplicate card catalogue at a cost of thousands of dollars a year; or,

(b) library staff wasting time as they walk up and down from their desks to the catalogue on another floor.

5. Flexibility and new technology

Although automation or data transmission are not exactly library functions, they are so much a part of information science today that flexibility in building design which will provide capabilities for all types of new technology must be one of the architect's first considerations. And yet libraries have been designed in Canada as recently as a year or two ago with:

(a) no provision for electrical outlets for audio-visual carrels;

(b) no special arrangements for key-punch or Telex machines;

(c) inflexible circulation areas.

IV Conclusion

These are only a few examples of the lack of proper planning - planning for a library or resource centre which did not recognize the importance of objectives, and the functions which achieve these objectives; planning in which the librarian, consultant, the user, the architect, and the administration did not all play a part.

In all instances mentioned the mistakes caused by ineffective planning cost somebody money:

- in unused space;
- in needlessly expensive staff routines;
- in a waste of faculty, staff, and student time.

I would like to suggest that we can no longer afford to waste money in that way. If the learning resources centres or libraries of the community colleges are going to meet the objectives and functions so clearly defined in the President's Brief to the Wright Commission,[11] a challenge will have to be faced. I would like to suggest that since the President's of the Colleges have set the priorities, it is up to them to initiate effective planning.

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LEARNING RESOURCE CENTRE
by J.R. Graham

"Comments" on Library Resource Centre, Oakland Community College, Orchard Ridge Campus, Farmington Township, Michigan, U.S.A.

With the broadened scope of learning techniques and audio-visual aids, what was formerly referred to as a 'Library Resource Centre' has now become more appropriately identified on many campuses as a "Learning Resource Centre".

In this presentation we will consider the requirements, planning and design of Learning Resource Centres for Community Colleges with particular reference to the Orchard Ridge Campus of Oakland Community College in Farmington, Michigan.

At the outset, it is important that we recognize the basic difference between a university library and a community college learning resource centre.

A library has been defined as a room or building where a collection of books, periodicals, manuscripts or any classified group of objects are collected and arranged for use or study. The university library has always been designed to suit this purpose. It is a building where students may study or conduct research primarily from printed material. Open areas for book stacks and study tables basically serve the students' needs in these buildings.

The community college has extended the function of the library, by means of audiovisual resource materials, to a learning laboratory. By these audio visual materials, the library has become a place for instruction and functions as another mode of the entire instructional program. By evolution it has become a Learning Resource Centre. Although research by printed material is still a part of its function, it is not at the level of the university library and more and more emphasis is placed on instruction.

Before discussing the Learning Resource Centre at Oakland Community College, let us first look at the College's founding, teaching philosophy and relationship between the Learning Resource Centre and the teaching program.

Oakland Community College was founded in 1964 and, currently, operates on three campuses in Oakland County as well as through additional satellite teaching centres. Orchard Ridge Campus was the first complete campus to be established with permanent facilities. Located in the suburban area of Greater Metropolitan Detroit, the Orchard Ridge campus serves students from the Detroit area as well as adjacent areas of the State of Michigan.

Giffels Associates in association with the Perkins and Will Partnership of Chicago received the campus design assignment in 1965. Facilities included eleven

buildings, more than 400,000 sq.ft. of floor area on a 147 acre site with construction phased to allow for progressive occupancy from the spring of 1967 to the fall of 1968.

Dr. John E. Tirrell, the founding President of the College, described the Orchard Ridge Campus as a "learner oriented centre". Instruction is directed toward individual student learning and allows the student to progress at his own pace. Basic considerations underlined that buildings must reflect the concept of the instructional program with the campus design taking full advantage of the natural beauty of the site.

The instructional program was based on the premise that the ideal teacher-to-student ratio is one to one. This was made possible by means of extensive use of audio-visual teaching stations throughout the campus. At these stations, a student can take full advantage of study carrels which have a full complement of resource material and where the faculty can meet with the student at the carrel on an individual basis.

Accordingly, the Learning Resource Centre was located in the centre of a cluster of instructional buildings and adjacent to the Commons Building with its four large lecture halls, dining facilities, activity rooms and the College bookstore. The Learning Resource Centre is connected by a pleasant subplaza corridor making it both convenient and inviting for student use.

The College emphasized that the study areas in the Learning Resource Centre and carrel area in other building units must be totally adequate to accommodate the students when they are not in actual classes or activities.

The capacity of the Learning Resource Centre was planned so that the total number of individual study spaces on campus would be 20% of the entire student body. While this percentage may appear high, it was considered that the extensive audio-visual resource material available in study areas would increase the use of library resources because of the stimulation that it provides for the curiosity and initiative of the individual students. Based upon a student body of 4,500, seating capacity of the Learning Resource Centre was determined at approximately 450, leaving an additional 450 study spaces for other buildings on the campus.

The size of the basic library collection was determined on the basis of 5,000 volumes for each 500 students. It was concluded that the maximum number of volumes that might ever be housed in this college library would be on the order of 60,000 to 70,000.

Based on these requirements, the final design of the facility was a building of 41,300 square feet enclosed space.

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With the special emphasis placed on accessibility and pleasant aesthetics for the Learning Resource Centre, it was felt that rigid security barriers should be avoided. Too often, the use of turnstiles and other rigid security controls establishes a psychological barrier to those contemplating the use of library facilities. As indicated, one entrance to the Learning Resource Centre was from a subplaza corridor to the Commons. To make the building even more accessible, another entrance was placed at the level above which opens on to the main plaza of the campus. This created two main entrances at different levels with control stations at both levels. To make the operation economical in off-peak hours, it was established that one station should control both levels. This was accomplished in the design by planning for vertical circulation and by an interior roll-down lattice-type screen at the entrance to the open area of the lower level. This provided the necessary security, reduced the staff requirement and made resource material available at both levels during off-peak hours.

The arrangement of space within the Learning Resource Centre provides functional facilities located on three levels. The lowest "subplaza" level which is connected to the Commons is highly committed to carrel areas and audio-visual resource materials.

It is on this level that the instructional program at the College is supplemented. The center open area consists for the most part of carrels equipped with audio-visual hardware. This area is referred to as the I.P.L.L. or Individual Program Learning Lab. Students may receive special help in subject matter by means of tapes, film strips, slides and movies.

Students may also broaden their education by taking advantage of a full complement of audio-visual material in a wide variety of disciplines. For example, music may be heard at designated carrels by means of dialing to remote tapes or reading comprehension may be significantly improved for the beginning college student by variable speed film strips projecting words in scanner fashion. In total, the amount of individual instruction obtainable in the learning laboratory appears to be almost endless. This is the heart of the learning resource centre. In support of the learning laboratory on this level are recording rooms, preparation rooms, a temperature and humidity controlled audio-visual storage room, an equipment repair shop, offices and seminar rooms.

The plaza or main level of the Learning Resource Centre is an open area laid out in a pleasant inter-mixture of lounge chair groupings, book stacks, study tables and carrels, all arranged to afford the student a ready use of resource materials and to create an inviting informal environment. Stacks are provided for 30,000 volumes and 200 periodicals with seating provided for 250 persons. Five seminar rooms, typing rooms, offices and work rooms are also located on this level.

A mezzanine looks out over the plaza level open area providing an extension of the facilities on the other two levels. The mezzanine has stacks for 13,000

volumes and 80 periodicals and seating for 75 persons.

What are the basic considerations in planning a Learning Resource Facility?

What are the key points to be satisfied in the building design?

First, a program must be prepared which details the functions, determines the areas required by the individual functions and diagrams space relationships between functions. (It is desirable that this program be developed in conjunction with the architect. No conceptual floor plans should be prepared by the user as it is the architect's responsibility to lay out the building based upon the prepared program mentioned.)

The seven key points which must be satisfied in the design are as follows:

1. The Learning Resource Centre must be located where it is convenient from other campus facilities and functions.

2. It must be designed for future needs to allow for further developments in audio-visual hardware and the resultant changes in instructional programs and information retrieval systems. These changes will affect facilities for viewing printed material in microformat; audio facilities for listening to prose, drama, speech and music; facilities for studying by means of television, video tapes, film strips, movies and slides, and, facilities for the backup and storage requirements for implementing these changing systems and programs.

3. Upon entering the building, all directional keys to the resources of the building must be visible for the easy orientation of the student.

4. Simplicity of layout is important for easy orientation and access to the building's resources.

5. The arrangement of functions of the Learning Resource Centre operations should be planned to provide the shortest distances between related functions.

6. "Open Plan" is desirable wherever possible for control.

7. "After hours" functions should be located to provide controlled access as well as a functional purpose during normal operating hours.

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must be satisfied in the design are as follows:

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LIBRARIES
by J.A. North

In Community Colleges, the Library Resource Centre should be a primarily student-directed service. To this end, we adopted a Statement of Objectives as follows:

1. To assemble and disseminate any material for independent study (regardless of its physical format) which is necessary to support and supplement the programs of instruction offered by the College.

2. To provide background and source material designed to encourage independent study.

3. To provide facilities and equipment where studies may be pursued in an appropriate atmosphere.

These Statements of Objectives may appear to be self-evident truths, but they have given us clearly defined guidelines which are readily accepted by the rest of the College, and which are flexible enough to meet the ever-changing needs of a Community College.

The main part of our College exists in a converted Government Arsenal building, and it is unlikely that a new main campus will exist before 1974. The present Main Library occupies an area of approximately 9,000 square feet on the ground floor of the existing building. It is a rectangular area broken up by lines of square support pillars with a distance between pillars of 20 feet in one direction and 25 feet in the other direction. When the area became a Library several basic decisions were made:

1) Apart from a small workroom area about 300 square feet, all areas would be accessible to students, and no closed stack areas would exist.

2) Print and non-print resource material would be integrated as closely as possible. All non-book material (which includes film, film strips, records, audio-tapes, video-tapes, film and sound cassettes, etc.) would be available to the students on a self service basis, together with the necessary equipment for their use. To this end, all equipment was placed in open areas with head-set attachments so individuals, or groups of students, could use audio-visual material without interference to library users using print material.

3) Reference and loan materials would be integrated to one sequence, that students would be able to see the entire available stock in one place, rather than hiding some of the material in a separate reference collection.

4) Staff were located at strategic points throughout the Library so that they were easily accessible to students.

5) Wherever possible, straight lines and regimentation were avoided. We deliberately placed the bookstacks, study carrels, and tables so that they created alcoves and quiet areas in the library. This also destroyed large aisles, stopped concentrated traffic flow (a main-road effect), and inhibited visual lines of sight from one end of the library to another.

6) This meant that wherever a student found material, he would be able to find seating space extremely close to the site of the material. This created a somewhat crowded area, but the students expressed the opinion that this made for a more intimate and pleasing working area than a vast regimented barn-like effect.

7) Carpeting was installed throughout the area and the walls and columns were painted vivid colours which the students like.

8) Throughout the planning procedure for this Library, student representatives were kept informed of what we proposed to do, and were constantly invited to criticize and supplement to planning process. This approach, together with the fewest possible restrictions on students within the library, has resulted in a feeling that this Library belongs to the students and that they are welcomed, rather than tolerated within it.

There are several other general points which should perhaps be taken into consideration. To study effectively, students must feel comfortable. If that means that they should be allowed to talk, smoke, lounge, or sit on the floor, this should be allowed for when planning the library. It is perhaps fallacious that all students prefer to study on their own. We have found that many students prefer to study (especially with non-book materials) in groups of between three and five. Use of tables, rather than carrels, for audio visual equipment plus the use of multiple headset jacks, has made this possible. The library should be sited somewhere within the college so that easy access is available to it when the rest of the college is closed. It is almost inevitable that extended Saturday and Sunday hours will be the rule rather than the exception within the next few years. Since many Community College libraries allow members of the public to use their collection, exterior access becomes an important factor.

In conclusion, design for libraries should meet the expressed need of the moment, with sufficient inbuilt flexibility for the future. Our Library uses the college

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computer for circulation control and the preparation of bibliographies, and we use a teletype machine connected to our local public library for inter-loan. Allowance for the inclusion of these items was made during the initial planning stage.

We do not know with any certainty what effect computers and audio visual aids (especially television) will have on Community College libraries over the next twenty years. Libraries being designed now should be planned with these things in mind.

Personally, I think the most important thing in planning a Library for students is to involve the students in the planning process, and to avoid making sweeping, and often incorrect, assumptions as to how students study. Try to ignore the blandishments of architects and faculty members concerning the design of your Library, and go out and ask the people who will use it what they require from <u>their</u> library!

LIBRARIES
by J. Feeley

Introductory Comments
John North has given you a hard practical look at how he planned and established a specific library at Centennial. I will give you a different perspective on two broader matters: the first relates to media and learning; the second relates to the function of libraries.[1]

I will not directly relate these two matters but I am sure if you think about them you will see many possible relationships.

I MEDIA AND LEARNING

1. "What do you do at school? What is one of the most important unseen things that you do at school?"

Write words. At school you write, and write, and write. You sit still and quiet and you write. You write millions of words. In elementary school you write about 3,200,000 words, in secondary school about 1,600,000 words; in university about 500,000 words. In 16 years at school you write about 5,300,000 words. It doesn't matter what the words are. It doesn't matter what the sentences are. It doesn't even matter if you are paying attention. You pull many of those words out of the air off the lips of teachers and you translate the oral sounds into written words. You copy many of those words from books. You even write some of those words 'yourself'. You acquire a skill. You develop a bias: a bias for the written word, for script, for print.

2. But the major technology for transmitting and preserving information has changed.

In the 400 years between Homer and Plato the Greek society changed from an oral to a script society. In the 200 years after Gutenberg the European society changed from a script to a print society. In the 100 odd years since S.B. Mores applied electricity to transmit information our society has begun a change just as radical and just as violent as the changes undergone by these earlier societies. In the two earlier societies the major technology for transmitting and preserving information changed and so did the learning and education processes. Likewise in the present society, the major technology

[1] "Libraries" as potentially applicable to CAATs, i.e.: as Resource Centres.

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for transmitting and preserving information is changing and so too are the learning and education processes.[1]

3. But have the teaching media changed? Enough?

After you get out of school you get a job. And you talk, and talk, and listen, and talk. You spend the rest of your life talking, and sometimes listening, but seldom writing. Sure you have to write letters, and memos, and reports, but never again in a sixteen year period will you write five million words. At school you learn how to handle the written word, and the printed word. But you never learn how to handle the spoken work, the visual image. What would happen to you during your sixteen years at school if you learn about audio and video record and playback units? What would happen to you if you spent half your sixteen years working in the sight and sound world of audio and video recorders? What if you record edit and re-record audio and video tape as much as you write, edit and re-write script and typing? Wouldn't you be a different person with a different way of working at the word and image and world?

4. And isn't that what learning is about?

We all know learning isn't just information. Learning is more. Learning involves perceptions and emotions as well as facts and the intellect. It isn't just reading books, but its writing as well. It isn't just watching TV and listening to radio and records, its making them. Once we know the effects of prolonged involvement with different media, we can vary the mix to produce the learning environments desired.

II THE FUNCTION OF LIBRARIES

1. The Library as a Concept

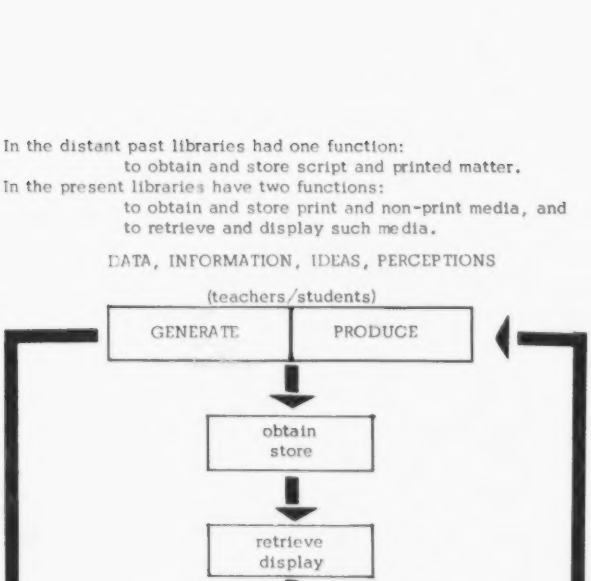
A library is many things but first and foremost a library is a concept, an idea. Only then is it space, media, and people (staff, users). Articulate and define your concept and the rest follows - not necessarily, not easily, seldom naturally, but if you work at it, eventually.

(Illustration on next page)

[1] See Eric A. Havelock, Preface to Plato (Cambridge, Mass., Belknap Press of Harvard University Press, 1963); H.A. Innis, Empire and Communications (Oxford, The Clarendon Press, 1950); Marshall McLuhan, The Gutenberg Galaxy (Toronto, University of Toronto Press, 1962).

In the distant past libraries had one function:
to obtain and store script and printed matter.
In the present libraries have two functions:
to obtain and store print and non-print media, and
to retrieve and display such media.

DATA, INFORMATION, IDEAS, PERCEPTIONS



In the future, which started yesterday, libraries have three functions:

to obtain and store print and non-print media,
to retrieve and display such media, and
to publish, and broadcast, and mix various media.

Once an educational institution discovers that it has these responsibilities and decides to honour them the library is conceived. Once the library is given money for space, media, and staff the library is born.

one function:
script and printed matter.
functions:
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play such media.

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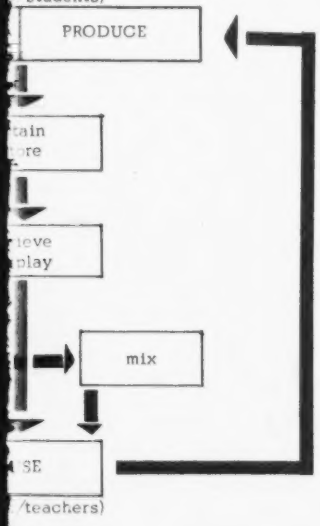

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2. Retrieving and displaying
Having obtained the media, the library has a responsibility to classify and catalogue it so it can be used by different patrons with differing skills. The 'display' function is more confusing. First you must realize that with books you have no display problem. Books are at one and the same time both storage devices and display devices (and they also have built in some very good retrievable devices). Other media - films, tapes, records - are basically storage devices. To view/hear them you need a separate, additional (often complicated and usually expensive) display device whether projector, screen, amplifier, speakers, turntable or whatever. To miss this point is to fail to appreciate one of the strengths of print.

The second point to recognize is that print is the only media that has been around so long that the actual storage of print bothers people. Put another way - micro-printing, whether microfilm, microfiche, ultrafiche, PCMI or whatever - is only a means whereby a lot of print can be stored in a smaller space. Have you seen anyone trying to store film, images, or video or audio tape image messages in smaller spaces? Of course not, not yet anyway. Viewed from this perspective all micro-printing is merely an extension of printing and thus to get hung up on whether or not the library should 'go into this material' is not the point. If libraries were to be just information storage dumps then all libraries would push for micro-printing so that everything could be stored in the library.

With this happening each community college library could store, relatively easily, 10 or 20 million books. But this is not the way community college libraries are going.

3. Broadcasting, publishing, and mixing
Once a library buys or rents record players, tape and cassette playback units (audio and video) it is in the broadcasting business - whether individuals or groups are involved is a matter of degree, not kind. Once a library buys or rents a photocopy machine and a tape duplicating machine it is in the publishing business (unfortunately operating under antiquated copyright laws - originally designed to protect a royally granted monopoly, governments still see copyright in this light).

Once a library makes a slide from a textbook, or a video tape from a film, or a film from a script, or a tape from a book it is involved in mixing media.

Libraries are already doing this, but in a non-directed fashion, but soon libraries will get into this seriously - working with faculty on curriculum, producing teaching aids, and producing media which replace teaching. These libraries have not only the media, the display devices, but the staff and equipment for production.

4. The Library as Space

Once the c. ncept is drawn out the rest falls into place:

a) You obtain, store, retrieve, and display the media:

books	films, 8, 16, 35
periodicals	tapes/cassettes, audio, video
government publications	records, microfiche, etc.
technical reports	

b) You figure out uses and equipment to permit users to

read	discuss
view	copy
hear	produce

c) You study your many different kinds of users all with their own skills and needs

individuals and groups
faculty and students
part-time and full-time

d) And last but not least you remember that the library is the only real non-pressure place in the college, that "self-learning is talked about but seldom allowed", and you try to subvert the reality and live up to the rhetoric. You try to produce a human space where people can learn what they want, in their own way, at their own speed, with varied media, in such a way that everybody enjoys doing it.

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LIBRARIES
by L.S. Langmead

In order for the architect to make any meaningful contribution to the design of a CAAT College library, he and the librarian must understand the basic needs of the library within the institution.

This means that the relationships of the library within
- the college
- the college system
- the public library system
- inter-library loan system
- the community

This means that the librarian has got to know what he wants and be able to justify the requirements in terms of accepted standards, the College's educational goals and be able to relate these to budget projections.

My experience has been that librarians are unable to do this type of thing and that they abrogate their planning responsibilities to the planning committee, a faculty member or the college planning department.

This situation gives the architect and/or the college planning department all sorts of free reign to have some fun with the library space. Two and three storey libraries, mezzanine floors, four and five points of access. Attractive monumental space that is nice to show visitors but spaces that don't work as libraries, spaces that are inefficient to administer, where lighting quality is poor, where staff cannot operate effectively and where the user gets skewered at every turn.

I realize that a lot of community colleges have been planned before the librarian has been hired and perhaps the colleges should think of hiring consultants in this situation.

The library planning sub-committee should consist of at least

- the librarian or library consultant.
- the college planning officer
- the architect
- a member of the teaching staff
- a user

We are spending millions on new college libraries and library systems which should result in new and exciting spaces as well as dramatic changes in library systems and services, but this is not happening, why? There are many reasons

but here are a few to think about.

- funds being cancelled or reduced with consequent loss of enthusiasm on the part of the library planners.

- fear of change, inability to adapt to high speed change.

- totally inadequate administration

- lack of organized planning.

The following items should be discussed by the library planning sub-committee:-

1) What is the size and character of the collection?

   - What will its growth rate be, annually?
   - How will the collection be organized?
   - By form - periodicals, government publications, reference, fiction, maps, or,
   - By subject - fine arts, science, medicine?
   - Will separate areas or conditions be needed for various kinds of materials - e.g., microforms?
   - Will the back issues of serials be separated from current issues?
   - Will they be kept at all?

2) - How many readers will the new library accommodate?
   - What characteristics will they have?
   - Will they be skilled in the use of library resources or dependent on staff?
   - Will they want to use material (and therefore require space) in the library, or in their offices?
   - Will special lighting and acoustical environments be required for some of the reader facilities?

3) - How many staff? What classifications?
   - What type of space - office or shared room?
   - Will technical services be purchased from an outside agency - now or in the future?
   - What effect will dependence on a wider network have on staff numbers?

Implications for the architect designing a library within a college building

1) If security is a problem within the library, how will random access from elevators and the mandatory escape staircases be controlled?

2) Will the mechanical system for ventilation and air conditioning give satisfactory temperatures and relative humidity?

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3) Will the lighting be satisfactory for book stack areas, reader areas and staff areas? Will the lighting, if it is ceiling mounted and in strips, give sufficient foot candles on the lowest stack shelf regardless of which way the stack ranges run? Will it be possible to change the intensity of lighting in areas where microfilm viewers are likely to be used?

4) Will the standard electrical services in the building allow for the use of electrical equipment such as microfilm viewers in mid-floor locations?

5) Will it be possible to add equipment which relates to new communication and computer technology at some future time?

6) Will the structural floor take the weight of both standard arrangements of book stacks and/or compact storage?

7) Will the building be sprinklered or will there be smoke detection devices?

8) How will deliveries be made, and at what frequency and time of day?

9) How will garbage be disposed of?

Assuming that these questions are answered satisfactorily, it is worthwhile stressing two items which often get left until too late in the design process.

a) Signage
b) Furniture

These items I leave for the discussion period.

I close with a quote from Robert Gutman, Professor of Sociology and Research Associate of the Urban Studies Center at Rutgers, in which he states:

In the reports of the library building institutes, it is somewhat distressing to discover how much attention is given (to) questions of building structure, ventilation systems, stacking methods, entrance lobby design, and how little criticism is levelled against new buildings because they have failed to deal in an original and creative way with the question of a library's purpose, the kinds of population it should serve, or how it might encourage people to use the library who otherwise ignore it.

SUMMARY OF GROUP MEETING 1: LIBRARIES
by G.H. Wright

During the morning session, these points emerged significant to the discussion on Libraries.

1. In the original brief for the Colleges, there had been special emphasis on the development of Learning Resource Centres.

2. That the concentration on hardware during the initial period of development in the Colleges must now be revised with greater attention being given to software requirements.

3. That the Library as the Learning Resource Centre in most Colleges were proving woefully inadequate, possibly due to inadequacies in the planning brief.

The Moderator indicated that to be fair to the architects of the Colleges, it is probably true to say that the Colleges may have even got a better library than they intended! A College generally gets what it deserves, if the planning brief was based on the views that students do not read, though they may be stimulated by audio-visual hardware; that the student may be allowed choice in the selection of subjects but cannot be allowed freedom to choose the learning system he prefers; that the library is nevertheless a symbol of learning to be displayed to show it exists; then the architect can be forgiven for the inadequate but attractive fishbowls that may have come into existence.

Mr. John North provided a practical commentory on how to turn inadequate accommodation into a useful environment. He stressed that the library was for students and as an independent learning environment for students, it must be designed and administered to assist rather than hinder their learning requirements.

Mr. Jim Feeley, on the other hand, questioned the basic philosophy of the education process and reflected this in the College library of the future. Examining the recording of information, he suggested that the 'print' oriented culture was developing into an 'electronic' culture which created a clash within the traditionally print-oriented libraries. The future implied that the librarian must be more willing to extend from a traditional concept of obtaining and storing, to the more dynamic role of retrieving, displaying, publishing and broadcasting.

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Mr. L.S. Langmead considered the suggestions for planning a Resource Centre outlined in the morning deliberations. He indicated the need for precise information on the size and character of the collections, the use of the library, especially the floor patterns, the number of users, the number of staff and their function as providing and indication of working environments.

The meeting was then opened for discussion and the panel questioned on the problems of encouraging the effective use of the library, selecting and discarding stock, meeting the needs of users distantly sited from the main campus and the development of standards.

Co-operation with other libraries in the area was indicated as important but at the same time, the responsibility of the College to meet the education requirements of the students could not be overlooked. Many public libraries cannot provide seats for their users because students unable to use their own school and college libraries, particularly in the evening or weekend, are forced to work in the Public Library.

The development of the library as an independent learning centre even within limited accommodation is still feasible, but it requires library staff interested in the learning process and an academic staff willing to co-operate with them in its exploitation. It was considered important to realize that library staff by their close contact with students involved in an independent library environment were immediately appraised of deficiencies or stock evaluation not often discernable to the academic staff. The usefulness of data from an automated circulation system was briefly mentioned.

The formulation of standards for Canadian Community Colleges was nearing completion and should be available in January. Mr. John North was a member of the National Committee involved in their preparation.

The meeting was adjourned at 2:45 p.m.

AUDIO VISUAL CENTRES
by J. Teng

Design According to Objectives or Heuristic Guess?

Since the Resource Centre and specifically the Audio-visual department is a rapidly changing area, the primary objective must be to design something which will not be obsolete before the contractor can get it assembled. This does not on the other hand mean that the audio-visual area should be designed as a giant utopian emporium housing millions of dollars in hardware and poised to countenance all future contingencies.

Therefore, it is necessary to study the ultimate growth potential of the audio-visual centre within the college and of the college within its community. From this study all those activities should be identified which are not economically feasible within projected budgetary limitations (#11, part VI). It is then necessary to make a taxonomy of specific objectives. (#2) The following is a sample of some questions which may clarify some of your objectives:

A. Philosophical Objectives (#11, Ch.29,30,32) (#4, p.3, 4)

1. What general policy guidelines are laid down by your board of governors, president, and senior administration?

   i.e. - The college will/will not utilize all existing media to reach its community. (Community is our campus)
   - A research library takes precedence over classroom information exchanges. (University level)
   - Effective classroom communication using all necessary technology and techniques is the single most important activity.
   - A pluralistic approach utilizing a wide variety of method with emphasis on individualization of instruction. (Burlington County College, New Jersey)

2. What type of academic climate must the audio-visual centre serve?

   i.e. - Arts and Humanities, Technical-Vocational, Adult Retraining etc.

3. What level(s) and types of communicative activity must the centre support?

   i.e. - large group - one-way (University undergrad.)
   - individualized learning (primary level, college level, adult)
   - small group - lectures (college level) etc.

4. Is the audio-visual ce
   interface between: Th
   media centre and the
   staff and students? D
   outside? Your college

   Is the audio-visual de
   for its institutional or

5. What maximum improv
   application of a syste
   process? (#11, Ch.5

B. Production Objectives

1. What types of overhea
   they be permanent or
   Do you need a photom

2. Is printing, duplicatin
   visual area?

3. What type of slide/fil
   COPYING, DUPLICATI
   FILMSTRIP CAMERA, e

4. Are you going to produ
   - 16mm. and/or Super
   - Editing facilities?
   - Sound (lipsync? mix
   - Preview area, cuttin

5. Is TV production a par
   - If not, why not? Lia

6. Is microform utilizatio
   - which system (MICR
   - do you need producti
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4. Is the audio-visual centre intended to help bridge the communication interface between: The professors and the students? Or between the media centre and the students? Areas outside the college to college staff and students? Departments within the college to the community outside? Your college and other institutions?

   Is the audio-visual department primarily a technical support facility for its institutional or departmental research projects?

5. What maximum improvement in your institution could result from the application of a systematic analysis of the communication-learning process? (#11, Ch.50)

B. Production Objectives

1. What types of overhead transparencies do you wish to produce? Will they be permanent or "one of a kind"? (DIAZO, THERMAL, XEROX etc.) Do you need a photomodifier?

2. Is printing, duplicating, copying etc. to be carried out in the audio-visual area?

3. What type of slide/filmstrip system do you need? (STILL STUDIO, COPYING, DUPLICATING, PROGRAMMING, ORIGINAL ARTWORK, GRAPHICS, FILMSTRIP CAMERA, etc.)

4. Are you going to produce films?
   - 16mm. and/or Super 8?
   - Editing facilities?
   - Sound (lipsync? mixing? transfer? etc.)
   - Preview area, cutting room?

5. Is TV production a part of the audio-visual department?
   - If not, why not? Liaison? Location?

6. Is microform utilization possible?
   - which system (MICROFILM, MICROFICHE etc)?
   - do you need production equipment?
   - readers, reader-printers etc?

7. What kind of photolab facilities do you need?
   - developing? printing? colour? etc.

8. Flexibility to cope with new processes?

C. SERVICE OBJECTIVES (#4, p.7, 9)

1. Is the audio-visual department to be central? campus? departmental? individual? some combination of these?

2. Are hardware storage facilities central? departmental? classroom?

3. Is software storage the responsibility of a combined resources centre? the library? the audio-visual department? Does the above apply to all media or to some and not to others? Where are non-circulating original materials, master copies, teaching portfolios etc. kept? How are various media to be stored? special environmental conditions? interfiled according to topic areas? separated according to media?

4. Is all information storage and retrieval the function of the library? Does the librarian look after the closed circuit TV video/and/or RF signal distribution system? Does TV program acquisition follow the same procedure as book acquisitions? etc.

5. What type(s) of scheduling, delivery and retrieval systems will be deployed for hardware?

6. Is a hardware inspection, maintenance, repair depot needed? What percentage of repair work will be done internally?

7. Is the department to be run on a closed-shop or open access basis? Are some areas closed and others open? Are the production, service, and storage-retrieval areas distinct? Is the department to be technician oriented or teacher oriented?

8. What degree of redundancy is needed in your service system components to assure what level of reliability at what acceptable cost?

9. What type of service administration is needed?
   - design of software system?
   - teacher training?
   - feedback?

D. Personnel Objectives (#4, p.5, p.11)

1. Is there to be administrative coordination of production, audio-visual service, information storage, information retrieval, information acquisition? Is any one area of greater institutional value than the other? If so, consider the necessary qualifications of the chief administrator.

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2. Once the institutional objectives have been determined, the qualifications and areas of interest of the audio-visual director and the head librarian can be selected.

3. Basic guidelines are available for the number and type of media technicians who should be hired (#1), (#6), (#8)

4. The staff requirements will be then helpful in designing location, proximity, liaison etc. of office space and work/service areas.

Conclusion

As a complement to the taxonomy of learning objectives, one should also make a taxonomy of communications media (#13) (#9). At this point a matching of objectives to media should be attempted. (#11, Ch.35) (#12, Ch. II). These must then be further mapped onto a list of the best available software-hardware systems. (#14). The total design of the media centre or resource centre has a direct bearing on its annual operating cost effectiveness and on its ultimate cost benefit.

Since the overall design philosophy is enormously complex, and contains many ill-defined, rapidly changing and in some cases unpredictable parameters, the design will necessarily defy simple logical analysis. This is not to say that we must abandon logical, systematic analysis, (#11, Ch. 50) rather, we must start with this aim in mind. Especially this is true for the analysis of sub-systems, technical problems, design of administrative procedures. However, overall system design and attempted coherence of spatial design for resource centres is still a heuristic choice, requiring experience as well as ability to grasp the overall picture and from this to draw intuitive approximations to correct solutions.

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AUDIO VISUAL MATERIALS
by J. Chisvin

Competition for a student's time, energy and attention has always been a universal problem in every teaching situation. Until recently, we relied almost entirely on the written word in order to transmit information and ideas, which resulted in the accumulation of a phenomenal number of books and other printed material, much of which is seldom read. A student establishes a habit pattern in which although he may originally approach a publication with a great deal of enthusiasm and expectation, he soon tends to give it a cursory run through, not because of lack of interest, but due to the primary fact of not having enough time. If he read every word in every book, on any particular subject he would never finish, or he wouldn't get any work done. Therefore, he rejects most of them and selects only those few he feels will benefit him most. Along with benefits he also considers the effort required and also rejects material which requires too much effort. Thus he tackles only such material which gives him the most benefit for the least amount of effort. To Practicioners in the communication field, this is formally known as the Reward over Effort ratio.

Reading is a high effort activity. In nearly every instance reading requires more effort to obtain the same information than other forms of communication. It requires effort with distractions or inputs from other sources. Therefore, the written message has to be of sufficiently high value to the reader or he will quit. Thus we find the usefulness of audio-visual media. The discriminating eye of a lens and the editorial ear of a microphone are able to stimulate a variety of senses getting a perception from a student with a minimum demand on his energy and time: a very high reward over effort ratio.

Transmission of thought involves the appeal to one or more senses - the more senses that can be involved in an experience, the greater and more lasting the impression. Therefore, a media such as reading is limited in effect even though results may be tangentially satisfactory. If a message is to achieve maximum penetration, imagination must be stimulated and techniques other than reading devised. With the use of audio-visual media where both sight and hearing can be appealed to, the experience tends to be more realistic and meaningful. When exposed to visual images and sounds that create an environment more natural to actual experience a student begins to identify and respond. Once he participates his imagination fills in many other senses more easily even though these senses may not be physically appealed to directly. In other words, the easier you make his mental work in his act of participation, the freer you leave his imagination to fill in what is not furnished - he begins creative thinking.

In today's complex, high speed world of expanding knowledge it is imperative that students have rapidly understandable, graphically displayed data immediately available to them from which to learn, study and draw conclusions.

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them from which to learn, study and draw conclusions.

To this end we find the resource centre equipped with a multitude of devices such as motion picture projectors, slide projectors, overhead projectors, filmstrip projectors, opaque projectors, micro projectors, video tape recorders, record and transcription players, tape recorders and players, learning lab systems, reading machines, transparency making equipment, radios, teaching machines, and on, and on, and on.

The proliferation of equipment places a great obligation on the designers and users of resource centres to ensure that space, acoustics, electrification and the luminous and atmospheric environment will permit the intelligent application of audio-visual equipment to the advantage of the student and not to his detriment.

From a personal point of view I would like to take this opportunity to express some disappointment in the fact that the Department of Education has as yet not taken the initiative to install a central information retrieval system for the use of all community colleges. In this plugged-in, gadget orientated society, computer technology combined with micro-film and micro-fiche techniques has the capability to handle the rising tide of knowledge and data with which it must cope. Sophisticated systems exist which can organize, store, process, retrieve and interpret data. A variety of information - graphics, text, alphanumerics, may be stored in central places where it can be kept up to date without danger of damage or loss. This information may be transmitted simultaneously, very rapidly, to many users in all the community college campuses as either visual displays, tapes, micro copies or even full size hard copy. Although costly, a single system serving all of Ontario would virtually replace or substantially reduce the size of the resource centre with the vast duplication of written material, and other media. I respectfully submit that the savings in construction and equipment costs of the individual community colleges would more than cover the cost of the most ambitious central information storage and retrieval system.

THE LEARNING RESOURCE CENTRE - Audio-Visual Materials - An Architectural Overview
by R.C. Wise

I would like at this time to briefly discuss the aforementioned topic in a somewhat chronological sequence, the Past, The Present, and the Future.

The Past

In the not too distant past the forerunner of the contemporary Learning Resources Centre was simply the book library. In many educational situations, with the exception of a few universities, the library was either conspicuous by its absence or merely a repository for the texts and books prescribed by a highly standardized educational system. Even at many institutes of higher learning that did have libraries, these facilities were often second rate and inadequate. The real library learning resource centre, until not too long ago, was the Public Reference Library.

In the decades since the 1930's, the whole educational system has had to, sometimes reluctantly, be geared up to handle the ever increasing demands of an avalanche of an enormously increased body of new and expanded knowledge - spurred to an alarming extent by the competitiveness and exigencies of war or the threat of war between major world powers.

Just to keep track and control of developments in so many new disciplines has required our educational systems to produce a vastly increased number of highly educated people.

The machine, and more recently automation and remote control of the machine, has eliminated the economic requirement for manual skills to such an extent that today it is no longer possible to survive in our society by merely having a desire or willingness to work solely with one's hands. Indeed many of the old hand skills by which men might have earned their living in the past have today become recreational hobbies for many.

The Present

A time has come for an ever increasing number of people when one man, in a single lifetime, can now expect to be trained and re-trained for two, three or even more vocations, merely to maintain a static standard of living.

Consequently, the modern educational facility from the primary level on up, is desperately trying to keep pace with and maintain an adequate learning resource centre which will satisfy the educational demands of today. There is now also, such a large fund of recorded knowledge that the physical limitations of a conventional library resource cannot keep pace and a whole new host of audio-visual techniques and their supporting hardware is now supplementing the book to such an extent that it is now almost its equal and in some instances superior as a teaching device. In fact, what has evolved is something that is

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more than merely an adequate library resource with books, but rather a vast learning resource of knowledge with an almost limitless scope with virtually instantly available information to which the well-stimulated student can turn to to increase his in depth knowledge and interests, in very compact periods of time, to an extent heretofor impossible.

With the facilities now being built into many of today's educational buildings the groundwork is being laid for the next major step into the future.

The Future

In looking to the future, the educator, to keep pace with escalating educational costs, must rely more and more on the hardware and techniques of audio-visual devices to keep up with the demands on his time and to adequately meet his teaching requirements. A specialized role for the educator is evolving where he is becoming an editor, producer and programmer of the educational media to be used by the 'in class' teacher and now beyond and into the home and the community through the medium of radio and E.T.V. In other words, the array of present and future generation audio-visual devices, skillfully employed by the educator, enables him to increase his teaching effectiveness enormously; it also allows the really great teachers to reach many more students than would have been possible in the past.

The role that the architect and engineer will play must be, now as in the past, to keep well informed of developments in this area so that the physical requirements of the sum of the parts may be organized in such a logical, practical and sensitive manner that the learning resource centres do not merely evolve into machines. The architect and enginer must ensure that these centres remain attractive inviting places for people, that will complement and stimulate the whole educational process.

The brief slide presentation which follows will quickly take us through the evolutionary periods just covered and possibly demonstrate the real expertise of the architect in this matter which is to create attractive physical environments for the learning resource centres with whatever meld of audio-visual hardware they might be required to contain.

TELEVISION IN THE COLLEGES
by A.M. Ingleson

I reflected upon the many school buildings I have visited throughout Canada and the United States, where I have seen a wide and diversified range of television installation - and the many educationists with whom I have discussed the use of television as an educational tool - plus my experience in the design of a television production training studio at Stephen Leacock Educational Complex in Scarborough.

From the architect's point of view there are, basically, four questions to ask at the outset. They are:

1. What is the College's policy with respect to the use of television as an educational tool in their programs?

2. What is the planning and design criteria?

3. What are the technical limitations?

4. What are the cost factors?

In considering the first point, the College's policy on television usage - as the College's architect it would be extremely important to clearly understand "how" the College intends to use television as a teaching device. There is a very wide variation fluctuating between minimal use and extensive use, - between individual use and group use, (both for small groups and large groups, which vary in size from 10 to 15 persons to upwards of 1,000) - as a support role, and as a television production training facility, all dictated by whether a small or large dollar budget will be provided for it.

At S.L.E.C. it was decided by the Scarborough Board of Education (and encouraged by us as architects) to utilize the television facilities on as wide a scale as possible. Therefore the first major consideration was to develop a television production technicians training program for students interested in the television industry. Since the course must provide real conditions it was decided to build a fully equipped production studio. With the financial assistance of the Department of Education, this became possible. Had this special assistance not been given, then a realistic, industry oriented facility could not have been afforded in the Board's plans.

With this decision made, it was then established that as many additional uses would be made of this highly specialized and productive equipment as possible. It was recognized that with this type of facility a school could originate, as well as disseminate information, on film, or live. The material could originate within the school or be picked up off-air, from outside sources, live or taped. Also, for very little additional money the school would be able to disseminate the information to receivers in "all teaching areas" - and as well cover specialized areas, such as the Cafeteria, Auditorium, Lecture Theatre, Case Study Rooms, Laboratories, Gymnas

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Furthermore, it was possible to have live or taped coverage of all indoor and outdoor areas, providing for athletic events and social events in addition to its use as an educational teaching/learning tool for individuals, and groups.

The School Board also recognized that the equipment was sophisticated enough to provide them with a television headquarters to service their entire educational system throughout the Borough.

Within the Complex itself the television facilities provide services to three schools - Pauline Johnson Junior Public School, Grades K to 6, which is located in a separate building on the site, - the John Buchan Senior Public School and the Stephen Leacock Secondary School, both tied by design in order to share common facilities, such as the Auditorium-Lecture Theatre, Cafeteria, Library/AV Resource Centre, and the athletic recreational facilities.

In short, the manner in which it was to be utilized made it a worthwhile investment.

Other factors that affected "the planning and design criteria" (my second question) - were such decisions as to develop for - year-round operation of the Complex, multiple use of the facilities, individualized programming, the participation of the Borough's Recreation & Parks Department, and to permit maximum use of the facilities by the community at large.

At present, as architects for Centennial College in Scarborough, we are undergoing a diagnosis of the planning and design criteria for their total college, which will be located on a minimum of three campuses. The users have provided us with many new thoughts on the question of television as a teaching device.

The following are examples of some of the statements being considered, quote:

1. Man gathers information through his senses, particularly the eye and the ear, therefore, the use of the media can be most favourable in the teaching/learning process.

2. The object is to put the student in a position where he can learn - how to learn. The best methods are - one to one, one to a group, group to one (media), and group interaction.

3. The teacher is moving away from one to a group situation and becoming a resource director who will act as a back-up for the media.

4. Group interaction will become more predominant.

5. The media will never replace many of the human functions in the teaching/learning process.

6. Technological developments in the media are not so important in the process - we must concentrate on the teacher's action within the use of the media.

7. In the year 2,000 there will be no classrooms, only interface between teacher and the student, or the media and the student.

8. Although there is apt to be too much gimmickry in the use of the media, - the fundamental consideration for the use of media in a teaching/learning process are the eye related to a page size, and the ear, to hear.

9. The teacher is too expensive, therefore the media must be used more and to better advantage.

10. The teacher is not a "resource" but an evaluator and a source of evaluating "resources".

11. Cinefilm is de-personalized, television permits learner - to identify with people and objects - to abstract from the whole, - and to carry out self appraisal.

With regard to my third question - the "technical considerations" are reasonably easy to engineer, provided requirements are clearly outlined and understood.

In the case of S.L.E.C. it is interesting to note that the television facilities provide for colour television production. This requirement alone dictated a very large need for complete air-conditioning of the television studio and main control rooms, because of the excessive heat build-up from the equipment. Similarly, a very large electrical service capacity for the extensive and elaborate equipment was necessary.

In any event, such highly specialized facilities, require highly specialized engineering, and it is essential to engage specialists well qualified in this field.

My last question which relates to the "cost for television facilities" covers an extremely wide range. On a recent trip to Worcester Polytechnical Institute in Massachusetts, I witnessed in operation what I thought was a most effective and economical use of television facilities for education purposes. The cost, just over $20,000.00 provided equipment set up in a standard classroom that permitted live lectures to be given to a class and at the same time be taped for future individual, or group use. The price was right, the quality was low, but acceptable for the intended purposes. Re-play was immediately available video-tape was made for future use by other lecturers, or for independent study. In addition, the "so-called" studio was available during unscheduled hours for taping by other lecturers to serve a variety of purposes. The equipment was

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completely portable and required only a minimum amount of permanent physical building services.

At the other end of the spectrum is S.L.E.C. I believe it is fair to say that the "building cost" of the television suite at Stephen Leacock was approximately $250,000.00, but added to this was the equipment costs, which fell into a similar price range. One has to reflect that this cost is equivalent to the price of a "ten to twelve classroom elementary school".
Question: Does television for education warrant such expenditures? - If fully, and properly used, - I believe that it does.

TELEVISION IN THE COLLEGES
by W.H. Smuck

The development of "Television in the Colleges" to date has been based on three assumptions that are interdependent.

Assumption 1: There is an expanding market for graduates of Radio/Television Arts courses, and Instructional Resource technician courses.

Assumption 2: Media materials are not available for integration into curriculum.

Assumption 3: That individual institutions can produce the quantity of material required, of a higher quality and for less cost than anyone else.

Let us have a look at these assumptions and attempt to gather some facts, and ask some pertinent questions.

Assumption 1: FACTS

(a) In the preliminary report of the Manpower and Immigration requirements and average starting salaries for Community College Graduates 1971, there was no demand whatsoever for graduates of Radio/TV arts in all of Canada reported.

(b) Several colleges are contemplating and one has temporarily suspended Instruction media/resource technician courses.

Assumption 2: FACT

(a) Like Books, there is a tremendous amount of material available that could be very effectively used. The Bibliocentre is engaged in this area of information retrieval.

Assumption 3: FACTS

(a) The University of Toronto, including Scarborough College with very extensive hardware capability, could not find the human resources or the financial resources to operate the hardware.

(b) Production costs, when realistically costed, are close to or exceed C.B.C. production costs.

(c) Little or no validation is available to indicate that the limited amount of material produced in universities or colleges has met objectives.

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Assumption 1: QUESTIONS

(a) Is it time that less reliance should be placed on the individual college advisory committees, and that the Applied Arts and Technology Branch carry out market surveys to discover what the true job market is?

(b) If the students demand high cost courses, can the system continue to finance them?

(c) If there is a very limited market for graduates, might we not consider regional centres for these courses and offer quality courses?

Assumption 2: QUESTION

(a) Should we expect television material to be absolutely perfect for each intended use? We don't expect a book to be, nor in fact do we expect a faculty member to be? Are compromises possible?

Assumption 3: QUESTIONS

WHAT IS TELEVISION?

(a) Status symbol, personified by glowing screens and elaborate switching equipment?

(b) Is it a replacement for faculty or an aid, similar to books used to provide back-up?

(c) Is television a production facility tied to question one: is it a central distribution of signal to reach 500 students in sociology at the same time: is it a number of small, portable recorder/production/playback units to suit individualized learning, or to deal with specific production needs of faculty and students?

At this point in time the technology is available to build television systems that will answer any one of the questions posed above, or combinations of them. I would suggest we might be wise to call a moratorium on hardware immediately and collectively and individually come up with the answers to these questions. Then and only then can we begin to plan, design and acquire the hardware required and give the guidance needed to the architects involved.

THE GROWTH OF AN EDUCATIONAL COMMUNICATIONS SYSTEM
by Dr. R.V. Svoboda

The purpose of using modern technology in education is to improve teaching effectiveness. The growth of the sytem often parallels that of the institution but more often it is a rather haphazard development.

Most systems are designed in the early stages to use software produced from outside the institutions. Sources are ETV, films from government and industry, slide and film strips. The more advanced stage is when software is produced internally. Stages of software development can vary but one could safely say that the final stage would be the production of broadcast quality films and videotapes. In summary software is provided a) from outside sources b) produced internally.

The first stage could be called the Audio Visual level. It is here most faculty demands are met and serviced. Often an Audio Visual Department will emerge as the extra duty of a teacher or it will be a number of fragmented efforts by various departments. Film and slide projectors, record players, tape recorders are most in demand. As budget and faculty interest increases the array of hardware increases. Often these items are more expensive and are used less frequently, but they can increase the quality of service offered by the Audio Visual Department, audio tape dubbing machines are an example. With the increase of numbers and kinds of equipment servicing can present a problem - a technician must be employed or the equipment sent out for service. The decision is often made for hiring a technician early since he can perform the servicing function as well as distribution.

Procurement of software is centralized in the Audio Visual Department. By having it in the Audio Visual Department total service can be offered by getting the film and giving the teacher it on the projector, thus making it more convenient. Word of mouth advertising is still the best way to spread the word but as the institution grows notices should be sent out advising people on the services available.

Software production can start on a small scale by making black and white or 35 mm color slides. The advent of the 1/2" portable videotape recorder and camera has allowed simple production without the need for crews and lighting. The lack of editing restricts the use but both faculty and students can use them profitably especially in impromtu situations. Television monitors are purchased and wheeled from room to room according to need.

The second stage is one that requires most planning and it is the installation of a closed circuit television system. It is a fortunate institution that makes provision for this during its building phase. CCTV is a distribution system for off air television programs, video tapes, film and slides. By using it for the last two, handling of equipment is reduced making for an easier operation for the teacher.

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A closed circuit system can link distant buildings by cable or a micro-wave system. The centre of the system is the master control room which is connected to each TV equipped classroom. The extent of the service offered depends on the number of videotape players. This can be expanded if the central switching unit has been designed to allow additional outputs.

A drafting room and a biology lab are connected to the CCTV system but they have the option of working as an independent closed circuit system. Each room has an overhead camera which can be operated by the teacher. The regular television equipped classrooms are connected by a two way phone system.

The third stage is where "in house" production is expanded beyond an experimental level and films and video tapes can be tailored to faculty needs. It is at this stage that the investment in hardware pays off as use of the distribution system increases as well as the demands on the television and film production equipment and personnel economies of scale can be achieved.

The closed circuit system can be expanded as the institution increases in size and a monochrome system can be converted to color. The use of color is essential to biology lessons where dissections can be taped and shown to any number of classes and for review. The conversion to color can be piecemeal by using an overhead colour camera and monitors in the biology room. The same can be done in drafting or in any drawing course where a large group can watch a teacher demonstrate. Greater utilization of the CCTV system as means of distribution can be achieved since most films are in color, and a color telecine chain will allow color transmission. The greater the variety of vices offered and the speed at which production requests are filled increase the faculty receptance.

The size of the production staff will depend on how ambitious the production schedule is and the availability of a studio. A basic television crew can consist of two cameramen (three allows greater versatility) a technician and a director-switcher. This is sufficient for actuality events such as guest speakers, seminars etc. Editing on 1" machines is restricted on the lower priced models but it can be done on the top line machines. A film crew must have quality 16mm cameras and sound equipment. Editing and audio mixing equipment must be available. A cameraman, assistant cameraman, sound man and director are the minimum. An editor must be hired if the director can't double as an editor. Film allows greater freedom of action and the manner in which it is edited allows for greater control over the finished product. But the question is to be asked - is this really necessary to have a big studio?

The expansion of the CCTV system can proceed at the same pace as the building program for the college or school. The two way communications system between the classroom and master control which at the second stage of development is a private telephone line can be replaced. The touch tone dial system can be used and connected to a computer to speed up delivery.

This only becomes economical when there is a large student body and a great demand for programs. Language learning laboratories which most often are under another department can be incorporated into the system. The end result is a wired school or college which can be connected to other campuses or institutions. This can be done by renting a line from the local cable company or even building a microwave line. The interim step would be to send tapes and films to other centres or campuses by car.

The development of a non print library must start at the first stage, but by the final stage it should be as much a part of the learning experience as the print library. To do this carrels should be built and be able to handle all the material offered. Films, videotapes, film loops, slide projectors, audio tapes are the main features of this area. Carrels can be outfitted for all of these or the various media can be spread out over a number of carrels.

THE COLLEGE
by Professor D

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THE COLLEGE AS A STUDENT AND COMMUNITY CENTRE
by Professor D.P. Engel

The creation and construction in less than five years of nineteen community colleges in Ontario is a unique phenomenon in North America, if not in the world. It is unique in that it illustrates the possibility to conceive of nineteen autonomous and reasonably independent institutions almost instantly, and to erect most of them from scratch. Unlike the slow growth and development of institutions such as the University of Toronto, the CAATs programme could be developed using a broader range of models, prototypes and experiences. It is no surprise that some of the CAATs establishments are now experiencing growth pains, as any institution has to develop, through time, a corporate identity which gives it significance in society.

The part of this workshop devoted to the theme of student and community centres demonstrates that there are attempts now being made by colleges to define and refine a modus operandi and a modus vivendi with their community at large. Caution, however, must be recommended as both types of centres may become both panaceas or placebos to cover up what may really be lacking in a college, that is a sense of community.

In the development of any community a corporate or collective identity must emerge before any efforts are directed at creating physical containers which manifest the images of communal spirit. Before a college centre or a community centre can be designed a corporate image must be defined and understood. I shall not endeavour to perform a lengthy analysis. I would like to direct the attention, however, to reasons which may explain why both universities and colleges have recently added campus centres, student centres, and student unions to their building programmes. These reasons may also prepare us for the potential success or failure of future centres.

The physical manifestation of a college finds its origins in the medieval english college which, in turn, was derived from the monastic abbeys of the 10th and 11th century in Europe. Both of these institutions catered fully to the daily and yearly requirements of a community of scholars whose aims and aspirations were reasonably similar. The architecture of such communities reflected the collective efforts. The proverbial in loco parentis or alma mater found reflection in the dining halls, the common rooms, the chapels, etc. An example of such architecture is to be found in University College at the University of Toronto.

The colleges of the past were self-contained institutions based on a solid accumulation of traditions, conventions, and doctrines; they offered security to a limited group of society. With the increase in population and its subsequent rush to become educated it is doubtful that the college model is applicable, in any of its traditional forms, to the contemporary programmes of education. We now have sufficient evidence to show that effort to maintain that model and to contemporarize it leads us to an architecture which is functionally efficient, highly rationalized, but eventually intellectually sterile.

It is an architecture which uses labels such as lounges, multi-purpose rooms and eventually student centres to achieve single-minded purposes.

Recent innovations in educational programmes suggest that education can be achieved through a continuous process of meetings, exchanges, contrasts and discoveries. Such programmes may lead us to a more responsive architecture, an architecture whose fundamental reason is stimulation and satisfaction.

What may this architecture bring to the CAATs programmes in Ontario? Possibly a liberation from the 100 acres site, a reconsideration of the single function college building and a reassessment of comfort values both inside and outside the buildings. Two preconditions must be achieved for these results to occur. Firstly, that no differentiation be made between academic time and non-academic time in order to permit the acquisition of education both inside and outside the classroom. Secondly, that the factors which determine the form of the architecture not be principally those of efficiency, security, scheduling, but also be those determinants which historically have been poignant determinants of the shape of human environments: climate, topography, traditions, seasonal cycles and, if need be, defence.

To some, these preconditions may seem like anarchy and chaos in the architectural programmes of the future. This need not be if the design criteria of future buildings are adjusted to an expanded vision of education.

As a result of the study of the University of Toronto for the Campus Centre project commissioned by the Students' Administrative Council, a team of architecture staff and students has been able to formulate three principles which we believe can give orientation to future concepts of colleges and universities.

These principles are:

1. The university (college) campus as an educational terrain.
2. The university's (college's) physical anatomy as a network for enlightenment.
3. The definition of a community image.

I shall elaborate on each principle before describing the design criteria we have arrived at for the University of Toronto.

1. The campus as an educational terrain. The campus is a territory; the territory consists of buildings, "open spaces", streets, lanes, parks, etc. The campus territory can be viewed as a collection of objects which in three dimensions create a formidable "landscape", a semi-artificial landform not unlike downtown Montreal core, a topography of places and spaces not unlike the Don Valley in downtown Toronto, or better, a terrain such as the one found in old Quebec City. This campus terrain, if it is to be used for education, must be fertile and instructive.

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Thus educators and planners should treat it with the same care a gardener would take with his garden.

2. The physical anatomy as a network for enlightenment. Ideally, the form of a campus should manifest itself as a healthy organism whose parts would be subservient to the organism's goals of educational stimulation. Very much as a healthy body functions, as a complex of devices which are all geared towards making that body live, the campus organism should be a very intricate network, or fabric, of parts whose function would be to incite the learning process. Thus the anatomy of the campus organism should become more instructive throughout and should lead its users to continually discover material to titilate the mind. Unlike the Ontario Science Centre where one pays in order to find out how things work, the campus should be a place where the working of things are evident.

3. The definition of a community image. The size and mobility of today's college and university population make the definition of a community image most difficult. A person develops an image of his world from the collection and accumulation of a diversity of images of places, objects and co-ordinates. As the horizon of that person broadens the complete image is akin to a patchwork which becomes his world of the mind. Thus one building or a number of buildings can rarely embody the images of a large group, even less so a population of thousands. The notion that a campus centre can become the symbol of a college or a university is questionable, as that centre will inevitably cater to a group of people with intrinsic interests.

The design criteria which we derived from the three principles are the following:

A. Transparency. Buildings should be designed so that their interior and exterior skins develop a transparency which make their anatomy apparent and instructive. Users of the buildings should be able to perceive the diverse educational experiences which are part of a college or a university, and thus be encouraged to make full use of the facilities. To achieve transparency in buildings, does not mean that we simply make everything out of glass; the Toronto-Dominion Centre is skinned in glass but removed from the urban user by a vast expanse of concrete esplanade and is as opaque as the new R.C.M.P. building in Toronto built of massive concrete. To achieve transparency, structures should be designed so as to respond to the subleties of human habits. The Colonnade in Toronto is an example of a transparent building full of surprises and discoveries.

B. Accessibility. Buildings should be inviting. Physical and psychological barriers which make buildings inaccessible to any but the people with business in them, or to those people who are adventurous, should be eliminated. Inaccessible buildings promote a system of static responsibilities which may have been valid in the past when colleges were walled-off units removed from an urban or regional context.

C. Spatial Continuity. No differentiation should be made between "outside" and "inside" space. Exterior and interior space treated separately suggests that the kinds of functions occurring inside buildings are different than those which occur outside.

D. Architectural Determinants. As I have already stated, careful attention should be given to those determinants which have historically shaped man's environment. This attention is becoming urgent as we are quickly developing the technology to construct buildings at whim. This increased ability to mould and shape the environment may lead to a world devoid of historical traces. The works and achievements of previous generations run the risk of disappearing in the name of progress and economic efficiency.

What implications may these criteria have on the architecture of colleges? One fundamental and unconventional implication is that the goals of higher education can be achieved with significantly less architectural gymnastics than has recently been believed necessary. Assuming that the three principles described above are valid one can envisage an educational architecture which makes do with what is available and whose direction is aimed principally at providing for the comforts and satisfactions of daily life. Without ignoring that some education must continue to occur in classrooms, one can also envisage the surrounding and supporting architecture as being an integral part of an urban or collective environment, where the needs of a heterogeneous and diversified population are satisfied, as well as the requirements of a population of intrinsic interest.

The kinds of architectural interventions would therefore be much more modest and would have to take into account the accumulation through time of precious previous facilities. The notion of "centres" would thus lose significance as condensators of communal energies as they would be seen not as loci of polarized interests but as simple devices to weave a fabric or network of facilities which would give satisfaction to everyday needs, desires, dreams and aspirations.

STUDENT SOCIAL SI
by B.L. Desbiens

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STUDENT SOCIAL SPACES
by B.L. Desbiens

Form Follows Function: Do our Educational Environments Stimulate Learning and Mental Health?

Step inside a college, look around, and ask yourself how the place makes you feel: satisfied and pleased, dissatisfied and uneasy, or no feeling at all. The entrance lobby may be warm and inviting or cold and severe. The lounge may be colorful and comfortable or bleak and seedy. The corridors are probably barren and sterile with lockers and room doors by the cell block. What does this setting say to you? Does its climate serve to stimulate you to investigate some feature of academic life? Or do the bright recreation rooms say to you, "You're here to play". Does the expensive lounge say, "You're here to relax". Do the long corridors and congested lobbies or dining room say, "Your not really important here." The disciplinary system and staff procedures state flatly, "You're juvenile". Exposure to this kind of climate is often the entering student's first impression of college.

> "The root of the problem is fundamentally the time honoured assumption that learning is a product of just the classroom, occuring solely as the result of action and reaction among the teacher, the student and their subject".[1]

As we all know the end product of education in the colleges is suppose to be learning. All we can possibly do as educators is provide the opportunities for learning to take place. But learning is a total process and a variety of factors influence learning. Learning is personal, so what a student learns depends considerably on what he wants to learn and what the subject means to him. Thus it is vital that we are aware of the environmental influences on behaviour. By this I mean that we should seriously consider how the physical and social environments of our institutions enhance intellectual and personal growth.

> "Institutions are here to facilitate individual expression, personal development, equal opportunity and personal freedom".[2]

Motivational psychologists tell us that all people have a great need to feel that they and their jobs are worthwhile.[3]

We therefore, can assume that the individual has a desire to try to improve or succeed on his job whether it be at an occupation or college program. It is the task of administrators and managers to eliminate the obstacles to achieving the goals that the individual has set. Wha do I mean, therefore,

by these obstacles to learning and development? Some educational decisions that come to mind are:

1. Do we want students to interact with faculty, administration, and other students on a meaningful level? If so, why large rectangular tables in the cafeteria rather than small intimate tables? Why loud rock music in the cafeteria? Why separate faculty and student dining areas and lounges?

2. Do we want our faculty and staff to be integrated and cohesive? If so, why build separate facilities, or put one division in a relatively isolated area?

3. Do we want our students to study? Then why not provide study space or experiences where they can observe proper study behaviour and surroundings.

4. Do we want students to use our professional counsellors? Then why put them in an isolated corner, in a trailer, or just in one centralized area.

5. Do we want our faculty to be advisors to our students? If so, why do we put two or three faculty in one office?

6. Do we want our students to learn how to make good adjustments to situations? Then why do we build curricula that offer no or few alternatives or electives?

7. Do we want our students to feel relaxed and comfortable? Then why do we do everything in large groups, or not provide private areas for students to retreat to, or why do we offer 30 hours of class per week?

Dr. Byron Rourke has said that what we ought to do is allow or at least assist our students to explore new ideas, surroundings, things. (4) Through exploration the individual will discover and better understand. But more importantly he will put into action what he has learned. Are we not colleges of applied arts and technology? Does our physical and social environments allow exploration in life skills to take place? (5) Do we construct our environment so that relationships between things become clear? George G. Stern believes that we ought to design effective college environments for learning. (6) His theory is that various institutions and individuals have particular characteristics and needs. These characteristics and needs must match if learning and the educational objectives are to be maximized. Do we know what the environmental press at our college is? Do we know who our students are? Do our students and college environments match? The College and University Environment Scales (C.U.E.S.) can tell us what our environments are. Do we really want to know? What are we doing to rationally determine our college environments so that they provide for greater learning opportunities.

to learning and development? Some educational decisions
ire:

dents to interact with faculty, administration, and other
ingful level? If so, why large rectangular tables in the
n small intimate tables? Why loud rock music in the
parate faculty and student dining areas and lounges?

faculty and staff to be integrated and cohesive? If so,
facilities, or put one division in a relatively isolated area?

students to study? Then why not provide study space or
they can observe proper study behaviour and surroundings.

dents to use our professional counsellors? Then why
ated corner, in a trailer, or just in one centralized area.

faculty to be advisors to our students? If so, why
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t they provide for greater learning opportunities.

But isn't the problem the fact that our society is changing so rapidly that the present functions of our institutions, are constantly outmoded. Paul Goodman tells us to level our buildings every five years and begin again. The least we can do is adjust to new needs and demands.

Perhaps basic to our objective of actively helping students to learn and grow is an understanding of the student as a human being who studies. Since he has emotional and physical as well as intellectual requirements and reactions, program objectives ought to include personal identity and security, relaxation and recreation, along with intellectual stimulation and learning. In other words, the planner ought to be firmly oriented to developing all college buildings as learning instruments, notable results may be obtained within funds available and if funds are so limited that educationally productive facilities cannot be built there is no real point in building.

Perhaps the major question that administrators ought to be asking themselves regarding obstacles to education is, "Are our physical and social environments conducive to good mental hygiene?"

Sidney M. Jourard, a noted psychologist, states, in his Personal Adjustment: An Approach through the Study of Healthy Personality, that the

> "Healthy personality is manifested by a relative absence of anxious self-consciousness and by lively interest in and pursuits of goals beyond security, love, status, or recognition."
>
> "Various authorities, such as Maslow and Fromm, have attempted to spell out lists of man's basic needs. Maslow has proposed that man needs physical gratifications, safety, love, and recognition before he can freely address himself to problems outside himself. Fromm has stated that man needs (a) a sense of relatedness to his fellow man, in order to overcome a sense of loneliness and isolation; (b) a sense of transcendence, which means the felt capacity to create and to be the master of nature rather than a passive victim of capricious natural forces; (c) a sense of rootedness, or the feeling of belonging to some group or society; (d) a sense of identity, experienced as the feeling that one is not just a cipher or an indistinguishable group member, but rather a distinct, recognized, and appreciated individual; (e) a frame of orientation and devotion: a philosophy of life or a religion which provides direction, meaning, and purpose to one's existence."

"In modification of the views of these two men it is suggested that man's basic needs include survival, physical gratification, love and affiliation, status, success and self-esteem, physical and mental health, freedom, challenge, cognitive clarity and variety in experience. If he meets these needs, he is freed to pursue other values outside the well-being of the self. Symptoms of basic-need privation include anxiety, loneliness, depression, feelings of inferiority, weakness, driven feelings, and boredom."[7]

These later characteristics are the very dynamics a college counsellor faces every day. These are the very insidious characteristics administrators try to avoid. It is my goal as a counsellor to focus upon the needs, aspirations, and potentialities of individuals or informal groups of individuals within the community, to help them achieve a greater degree of personal self-relization and fulfillment. (1)

It is the college administrators responsibility to focus on the physical and social environments both internally and externally in our community, so as to provide environmental characteristics that will facilitate social and personal growth and development.

All individuals would hope to work, learn and live in an environment characterized by trustworthiness, openness, respect for differences, empathy, and positive regard for others, tact, freedom to create, faith in man's potentials, productivity, sharing, risk taking in order to discover, and stimulation of thoughts and talents. It seems to me that this is where the process of learning can best take place. Maybe then we can discover the talents we possess, our own inner beuaty; the excitement for life, and the love we can share for one another. Ray Stevens, a popular song writer, has eloquently stated that "Everything is beautiful". If we can discover this beauty in things, in people and in ourselves then this most assuredly will be a better world in which to live.

(1) Riker, Harold C.

(2) Bromley, Ann (ed.)

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(4) Rourke, Byron

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(6) Stern, George G.

(7) Jourard, Sidney M.

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RECREATIONAL FACILITIES
by H.V. Walker

For the purpose of this discussion I am going to assume that a beneficient provincial government in a flight of post election exuberance has offered financial assistance to every college interested in providing recreational facilities.

So, we will assume that the money is in the bank and the colleges have the means to the end. What is the end? What kind of facilities are required? It would be natural to expect some variation between colleges in this regard depending on a number of conditions.

In these opening remarks I would like to examine some of the influences which will affect the final decision and then proceed to consideration of the actual physical design of the required facilities.

The first part of this analysis, basically is an examination of relationships and four of these are illustrated in the diagrams.

Diagram A. The question of relationship between the college and the community would seem an obvious place to start. Construction of new facilities will be determined by the availability or otherwise of such facilities already existing in the community. Conversely, an assessment of community use of the new college facilities is also required. These projections must take into account such factors as the shorter work week and the corresponding increase in participation in leisure time activities. In this regard it should be noted that the demand for facilities is likely to accelerate by self generation - the more the participants the more the interest, the more the interest the more the participants and so on. Inter-collegiate rivalries will add their impetus. The design of the facility will also have its effect - is it comfortable, accessible, year round?

Diagram B. Refers to relationships between the college and its recreation facilities. On the one level there is the impact of the curriculum which may include courses specifically related to recreation leadership and on the other there is the question of the integration of recreational facilities with the other resources of the college. The physical separation of sports and athletic facilities from other buildings on campus will only serve to perpetuate the erroneous concept that one is for the body and the other is for the mind - "and ne'er the twain shall meet". It is not surprising perhaps, that, the Federal Governments' task force on 'Sports for Canadians' displayed some sensitivity on this point remarking on the generally unfavourable position the physical education teacher has within the educational system compared with his colleagues in the more 'cerebral disciplines'.

Proper planning may not solve this problem entirely but it can help to encourage a healthy cross pollination between all the disciplines. Why not, for instance, locate the pool next to the library so that at the end of a long day's work the

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student can be refreshed with an invigorating swim before going home. If he has a 100 yard walk to the field house in the rain the opportunity is not likely to seem quite so inviting...nor so natural.

The two diagrams C and C1 illustrate relationships with the multi-campus college. The college in diagram C has centralized recreation facilities while diagram C1 indicates a dispersed arrangement of minor facilities with a centralized major facility such as a stadium, large auditorium, or olympic sized pool.

Clearly, the location of these components in the multi-campus college must be given very careful consideration in order to avoid splitting the campus into hierarchies of those that 'have' and those that 'have not'.

When the college has completed its analysis of relationships it will then be in a position to direct its attention to the design of those structures which will house the required facilities.

By way of introduction to this area of consideration, I would like to refer to the transcript of some remarks made by Dr. Harold Gores. In them he defined a college as 'people, ideas and a place' - in that order but without in any way detracting from his belief, which he also expressed, that 'quote' 'environment is an important determinent of how much gets learned' 'unquote'. This surely can be applied as equally to recreation as it can to academics. However, it is quite evident that the kind of environment we have been providing for recreation to date - certainly at least for physical recreation - falls considerably short of the enriching experience it could be.

For example, do gymnasia really have to be so hard surfaced or clinical or noisy? Why not consider sound absorbent surface materials for some of the walls or floor. An antiseptic or colourless appearance is not necessary either. Watching events in the gymnasium will be of interest to most students so why not provide views from the corridor or lounge areas which can double up as balconies.

Pools share similar characteristics with gymnasia - noise, hard surfaces etc. - the feel here also can be softened with intelligent design. We do not have to be immoderate hedonists to recognize some of the merits of the Roman thermae with their plants, flowers and running water, statuary and frescoes forming a cool and agreeable retreat in the hot, sultry Roman summer.

Economical land use is an imperative for all college planning. Related to recreational facilities this can be achieved by construction of multi-storey and/or multi use buildings. The concept illustrated is of a hockey arena, the ice surface of which is below grade and the roof of which can be used for tennis, bowling or other outdoor activity. We have completed, for the Toronto Board of Education a cost analysis of an adaptation of this design for an arena set into a parking lot, the roof in this case being used for car parking. The sides of the

building above original grade in this scheme are covered with landscaped berms which provide good insulation for the ice, of course, as well as neatly integrating the building into the park as an element of landscape. Because of their size arenas are frequently unpleasantly dominating intrusions in public parks, as we have all noticed I am sure. The height of 18' from ice surface to underside of beams will permit the use of the arena for lacrosse or tennis in the summer.

The pith

and

While on the subject of land use and economics let us keep in mind the provision of accommodation for year round use. There is little point in building open air pools which can only be used while most of the students are away in the summer or in building outdoor hockey rinks which can only be used for four months in the year.

A seasonal use single arena can be built for $300,000.00 while a year round use building can be built for only 10% more but as I am sure you realize conversion from the former to the latter after construction is completed is quite a different matter. Also look into the merits of double versus single rinks, considerable extra revenue can be generated for very little extra in operating costs while capital costs are not doubled. With reference to revenues I might add that in our experience there has been a very swift and remarkable transformation from the loss side of the ledger to the profit side once outdoor rinks are enclosed.

Reverting to the design of pools for a moment, I do hope that despite their enclosure for year round use some attempt will be made to open up this activity to the out of doors. It is strange how we keep getting back to the Romans but they managed to do this extremely well - this integration of their social, aesthetic and recreational pleasures.

The fixed use of space was discussed yesterday and of course its dangers should be kept in mind in connection with recreational facilities. The cyclical popularity of certain sports is something to consider in this regard. In recent times there has been a renewed interest in lacrosse; yesterday at Humber I discovered much to my surprise that the horse population had doubled in the last ten years; and after recent events at the United Nations perhaps one should keep an eye on ping pong for a while.

I realize that in these brief remarks it has not been possible to get very deeply into this subject - especially if one accepts the definition of recreation as 'any activity engaged in voluntarily for the satisfaction it brings'. For instance I have not made any reference to creative drama, or crafts or consideration for the handicapped.

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The pith and substance of what I have been trying to convey is that we should:

a) Analyze relationships.
b) Develop a healthy and natural integration of the recreational and other facilities in the college.
c) Humanize our environment.
and d) Build economically and realize the maximum cost benfits.

RELATIONSHIPS COMMUNITY/COLLEGE/RECREATION FACILITY

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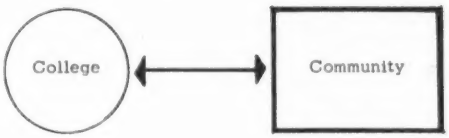

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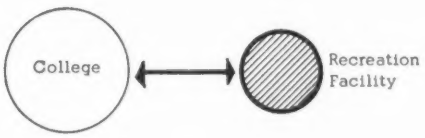

SINGLE CAMPUS

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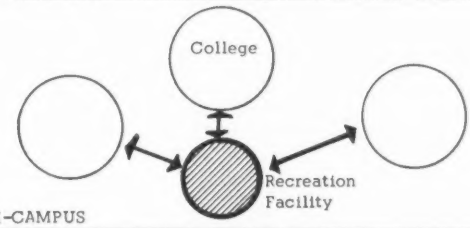

MULTI-CAMPUS

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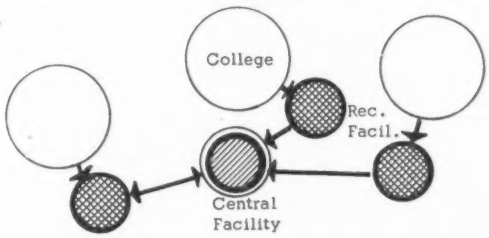

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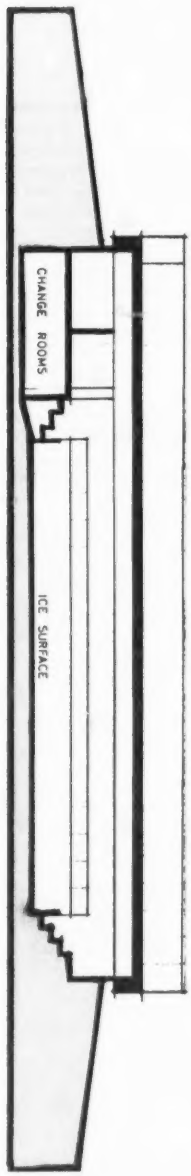

RECREATIONAL FACILITIES
by D.B. Caswell

I should like to say that I was pleased to accept the invitation to attend this Workshop and to contribute from the viewpoint of what facilities are available to secondary school students.

The past five years have produced significant developments in the organization of Ontario secondary school physical and health education programs because of the introduction of HS.1 which established, within certain guidelines, a credit system leading to appropriate secondary school diplomas.

A few years ago, some Ontario secondary schools pioneered a program whereby students could select physical and health education as a credit course or not take it, should they wish. Subsequently, other secondary schools have adopted similar programs while others have developed different ones whereby students in some grades are scheduled for physical and health education and at other grades they could choose not to enrol in the subject; i.e. physical and health education compulsory in grades 9,10 and 11 and optional in grade 12; compulsory in grades 9 and 10 and optional in grades 11 and 12. Possibly the most significant development in many schools has been the elective type program which permits students to select certain activities from within those that are offered.

As time has passed, high school staffs have been examining their programs and each year more are introducing "elective programs" so that those students who have chosen physical and health education as a credit subject may elect to take activities that are organized within the limit of the available school and community facilities, supplies and equipment, student interest and the teaching strengths of the different teachers.

It is apparent that more activities are being conducted on a co-educational basis. Outdoor education programs have been introduced in numerous schools and a greater emphasis has been placed on activities that have a carryover value.

To meet the challenge of providing a revitalized physical education, health athletic and recreational program, staff members have examined existing facilities, areas in the school that had not been used previously; i.e. large hall areas, cafetorium, stages in gymnasia, and neighbouring recreational facilities; i.e. rinks, tennis courts, golf courses, parks, areas for cross country run, skiing, etc.

One cannot say that all geographic areas of the Province all schools have identical indoor and outdoor facilities; i.e. out of more than five hundred secondary schools in Ontario, probably fewer than eighty have swimming pools; some schools have a double gymnasia with a folding door; some two double gymnasia; some a double gymnasia and a single gymnasium; some a double

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gymnasia and two single gymnasia. In a number of schools, a stage is included as a part of the gymnasia. Different schools have outdoor facilities consisting of a 1/4 mile track surrounding a football field while some have an additional area which may include a soccer field, tennis courts, etc. The location of a school within an urban community whether in the inner part of the community or on the fringe, or its location in many diverse geographic regions of Ontario, will provide the staff with the opportunity of conducting programs quite different from each other.

Graduates of secondary schools have and will continue to enter Colleges of Applied Arts and Technology having experienced a wide variety of programs that will have depended on the human resources, the various indoor and outdoor facilities, and the supplies and equipment that were available. Other students may not have selected physical and health education as a subject.

Because of the changes in the administrative structure of the physical and health education curricular and co-curricular programs, there has been a change in the thinking of a number of people regarding the facilities needed. While it is important that secondary schools have an indoor facility with an area of approximately 80' x 90' or more with a folding door and a ceiling height of approximately 22 ft. with spectator seating accommodation for the playing of games such as basketball, volleyball, or badminton whether played on an intramural, recreational or inter-school basis, there is a growing recognition of a need for smaller activity areas with a lower ceiling height; i.e. 14 ft. This type of facility, in addition to the large area, provides young women and/or men with the opportunity to participate in different kinds of dances, most apparatus work, conditioning exercises, weight training, wrestling, etc. These kinds of facilities with lower ceiling heights permit the staff to organize an elective program.

For many years, secondary school outdoor facilities have focused attention on providing for competition such as track and field, soccer and football and we have for the most part neglected field hockey areas for the girls and in most cases tennis courts. It should be noted that cost has negated the purchase of school sites large enough to provide additional outdoor facilities.

It is my opinion that many students who arrive at Colleges of Applied Arts and Technology following a period of time away from a school environment, or those who enter directly from secondary school whether or not they have participated in school physical education, intramural or inter-school programs, will have some interest in using recreational type facilities as well as those related to team competition. Squash courts, curling rinks, tennis courts, skiing and aquatic facilities, bowling alleys, conditioning rooms, table tennis areas are desirable facilities if any or all can be provided within the finances available. In the interest of economy it may be that some neighbourhood facilities may be available on a rental basis.

It would appear that while many students will want to compete in organized team competition, just as many will welcome the opportunity to involve themselves in less structured activity programs of a recreational nature.

FOOD SERVICE FACILITIES
by W. Flanagan

When we talk of Food Service Facilities, it goes almost without saying that no programme will be successful if the service, quality and cost of the food is not acceptable to the user.

Even though the Community College is a non-resident situation, the student is still considered "captive" in that the course programming and often the College location necessitates that students eat "on campus".

The Architect, as a member of the team, assists in the development of the Food Services philosophy and programme and translates that philosophy into space in the building.

The requirements of the food service programme must be tailored to meet various needs - seating space for the "brown baggers"; vending machine meals; short order specialty food and full course meals. To accomplish this a variety of spaces is required; accommodation for the "eat and run" group; for small group discussions; dinner meetings with adjoining servery; facilities adjacent to lounges and recreational functions and in addition the dining hall updated from what we have known in the past.

The teaching of Food Service Course, the use of the colleges in conjunction with community functions, the impact of the changing attitude toward beer and alcohol, the trends of providing the food service through the use of large central kitchens and re-constituted food, the decision to have the operation "in house" or catered all have their effect on the food service facilities.

Food storage, preparation, staff accommodation, truck access with loading dock facilities, vertical distribution systems with elevators and dumbwaiters, facilities security all require consideration.

The visual impact, the atmosphere of the spaces provided will contribute to a successful operation. This requires a careful assessment of the function of each space and its realization in the final dimension, the judicious choice of building materials and furnishings while not losing sight of practicality, serviceability, ease of maintenance and budget.

The developments at the University of Guelph and the Gourmet Fare at Sherway Plaza are notable examples of successful Food Service Facilities.

In common with our galloping age, new Food Service requirements are evolving to meet the ever-changing need. It is therefore a MUST that there be understanding and communication among the participants, administration, architect, operator, user and that forgotten participant, the taxpayer, to ensure that the needs of each group are realized.

FOOD SERVICE FACILIT
by W.B. Thomson

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d Service Facilities, it goes almost without saying that no ccessful if the service, quality and cost of the food the user.

munity College is a non-resident situation, the student captive" in that the course programming and often the ssitates that students eat "on campus".

ember of the team, assists in the development of the ophy and programme and translates that philosophy into .

he food service programme must be tailored to meet ing space for the "brown baggers"; vending machine meals; food and full course meals. To accomplish this a variety : accommodation for the "eat and run" group; for small inner meetings with adjoining servery; facilities adjacent tional functions and in addition the dining hall updated own in the past.

Service Course, the use of the colleges in conjunction tions, the impact of the changing attitude toward beer ds of providing the food service through the use of large re-constituted food, the decision to have the operation , all have their effect on the food service facilities.

ation, staff accommodation truck access with loading cal distribution systems with elevators and dumbwaiters, l require consideration.

e atmosphere of the spaces provided will contribute to n. This requires a careful assessment of the function of alization in the final dimension, the judicious choice of furnishings while not losing sight of practicality, of maintenance and budget.

the University of Guelph and the Gourmet Fare at Sherway mples of successful Food Service Facilities.

alloping age, new Food Service requirements are evolving nging need. It is therefore a MUST that there be under- ication among the participants, administration, architect, at forgotten participant, the taxpayer, to ensure that the re realized.

FOOD SERVICE FACILITIES
by W.B. Thomson

What is our ultimate goal in the planning of food service facilities? In my opinion, it is to provide food of quality at a reasonable price to the user. How can this goal be best achieved is the question I think we are faced with here today.

For your consideration, may I suggest the following:

1) In the master planning for your College, include the food service high on your priority list. Contract, if you wish, for a feasibility study of your food service facilities but you should set the plan down on paper and follow the plan, adjusting only for deficiencies.

2) The College should appoint one representative to co-ordinate the food service planning.

3) Through your architect, select a food service consultant who has experience at the College food service level and make reference checks with previous clients and, if possible, the actual food service operators of the projects.

4) Select a food service operator, if you do not have one at present. In the selection process, the College should advise the Caterer of the master plan for the food service. The College should establish the tender qualifications and provide a basic standard and quality list for food products.

5) Get your selected Caterer involved in the food service planning. This objective provides you with a check on the facilities and a pipeline to the everchanging food service industry.

Once the above have been implemented, you have laid a good foundation for your goal.

As your food service program develops, you will be presented with many decisions, some of which affect the second part of our goal --- reasonable prices. You should consider the following:

a) Demand for hot meals (meaning meat and two vegetables) represents 15% to 20% of the users.

b) The major increase in prices will be a result of labour increases which will be general in the food service industry.

c) The implementation of disposables to assist in controlling food prices will be necessary in the future.

d) A mixture of ready and convenience foods with on-site preparation should be considerations in your overall food service planning.

e) 70% of the student enrolment will use the planned facilities. The architect should be encouraged to provide for the students lounge areas throughout the College complex - hot and cold drink beverage machines. This should assist in relieving the cafeteria proper of the congestion experienced from card playing etc.

f) Without sacrificing the efficiency of the operations, the College, the architect, the food service consultant and the operator should all be concerned with the general atmosphere of the food service operation. I suggest the materials and general appearance of the dining room should be practical and material selection functional for the general purpose. I cannot over-emphasize the importance of the two points I have just made. I will leave the discussion of atmosphere and decor up to the architect where it belongs, but I do feel that a good atmosphere is conducive to a successful food operation.

THE COLLEGE AS A
by J.H. Drysdale

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THE COLLEGE AS A COMMUNITY CENTRE - Introductory Comments
by J.H. Drysdale

What is the Role of a Community College

There is no better way to start the session than to ask ourselves whether or not we know what the role of a community college really is in the community. I'm sure that this aspect of college activity has been the least planned in the past during the planning stages of colleges, and yet, it has become a dynamic part of the college, and I refer you to Dorene Jacob's report, "The Community Colleges and Their Communities" for substantiation of this comment.

COLLEGES DIFFER VASTLY IN THEIR LOCATIONS - some in rural, suburban, and urban areas. Some are responsible for a few square miles with high density population; and others, with over 60,000 square miles with a rural population density of .8, and urban population density of 1,600. Some are located in industrial areas, agricultural areas, in cities and towns, and in areas from which the young migrate, and in areas to which the young immigrate.

THE ROLE OF THE COLLEGE AS A COMMUNITY CENTRE COVERS AN INFINITE VARIETY OF REQUIREMENTS, many of which have already been provided through innovation on the part of college staff, but as this is a College Design Workshop, we should be looking at how we might introduce planning into a college design to meet community centre requirements.

THE IMPORTANCE OF ASSESSING THE ECONOMIC INFLUENCES CREATED BY THE LOCATION OF A COLLEGE in a particular area is related by many of the same parameters when considering the college "community centre". The college will be an asset most of the time, but it could be the cause of irritation to well-established facilities through low cost rental of space, equipment and services.

THE PUBLIC DEMANDS THE MAXIMUM USE OF FACILITIES which are often a source of expense to the community through tax exemptions and their use of public services, therefore, we must strive to make best use of the facilities.

AN ACOUSTICALLY DESIGNED AUDITORIUM AND WELL-APPOINTED CAFETERIA might be the cause of pushing local theatres and restaurants towards the brink of financial failure in small towns. It is doubtful whether they are considered during the planning stages. Should we be governed by these matters? I believe we should.

THE COMMUNITY USE OF SOPHISTICATED COLLEGE EQUIPMENT AND QUALIFIED STAFF by local industries, businesses and health centres has saved the taxpayer money and encouraged community development through a Resource Community Centre.

WE ARE IN AN ERA OF COMMUNITY DEVELOPMENT AS SEEN BY THE VARIOUS GOVERNMENT DEPARTMENTS associated with this matter. We should be re-examining our own college policies. Are the Boards of Governors establishing policies towards better use of the college as a community centre? We talk about and it happens, but do we have a policy in this regard? Is it necessary to have a specific policy?

POLICIES OFTEN HOLD BACK DEVELOPMENT. Professor Redden quotes that "Organizations often become frozen around fixed ideas". Perhaps the present success of the college as a community centre has been because of the looseness of the policies.

THE FIRST RULE IN PLANNING IS TO GO THROUGH THE WHO, WHAT, WHERE, HOW AND WHY ROUTINE

WHO is the Community? The underprivileged socially and the privileged socially; the underprivileged financially and the privileged financially; the educationally disadvantaged and the educationally advantaged. The young and the old, the married and the single. Of this group of individuals, many will not avail themselves of any community facility because of their position socially, financially and educationally.

OUR FIRST ROLE IS TO PROVIDE A CENTRE FOR EVERYONE, particularly the underprivileged. Remember that the underprivileged are still a minority in our colleges and universities today.

WHAT is a Community Centre? It must be a resource community centre and its other activities I will leave to the speculators, but I would like to comment on one group in our community - THE OLD.

ONE OF THE FINEST COMMUNITY CENTRES IN THE WORLD FOR OLD PEOPLE is where they can meet their own kind, both male and female without community centre directors, etc., i.e., the old-fashioned pub, where, with friendly company, a pint of beer and a box of Dominoes, many solutions to the world's problems are discussed with enthusiasm. The old-age pensioner who buys his place through a pint of beer is indebted to no one, and retains his self respect; he is not provided for by "paternalistic do-gooders" who theorize with regards to the needs of the elderly.

WHERE should a Centre be? I hope that I will know after this morning, but I would urge a convenient location - or you may be obliged to "make" it a community centre; it might not evolve naturally.

HOW should a Centre be created? Co-operatively, of course. Last year I attended a school design workshop where high schools were promoted as community centres.

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HOW MANY COMMUNITY CENTRES SHOULD YOU OR CAN YOU HAVE IN ONE AREA?

In concluding these introductory remarks, WHY a Community Centre?, let us insist that it is because of a need. Today we should hear these needs and act accordingly in the planning stages.

THE COLLEGE AS A COMMUNITY CENTRE
by J. Stefura

"The world in which we live and must make our way is one which demands an ever-changing pattern of occupations and rising level of skills..... The general education is the best basis on which to build and re-build the required work skills of the future...The increasing speed of technological change requires expanded facilities to meet those needs of the community." Wise words of Dr. Deutsch which undoubtedly contributed to the establishment of the Colleges of Applied Arts and Technology.

And the Colleges have taken up this task of preparing our young men and women to enter the multitude of highly skilled jobs available. But with the preparation of these skills, we must also consider that our inventiveness and our pre-occupation with increasing productivity and the G.N.P., and the level of our technology, is also creating problems for a vast segment of our society.

At one of the newly developed mines in the area where I live, one of the nickel producing companies has installed an automated, computerized receiving-conveying-crushing system. This system requires twelve skilled button pushers to operate it. The older traditional system needs 147 men to perform the same sequence of operations. The drudgery of the operation is gone, but so is the satisfaction of making it work. Fewer man hours are required to produce greater amounts of ore.

During a recent International Conference of Personnel Administrators in Montreal, it was stated that the four-day work week, with higher pay, is just around the corner. The Steelworkers Union is striving for this goal - the four-day - 32 hour week by 1974.. What do people do with their leisure time? In Sudbury, many of the men "moonlight" - possibly not so much for the money as for something to do. Others do the things they always wanted to do - hunt, fish, ride their Skidoos, and get bored. Dennis Roberts, a psychologist in Sudbury, once said that his business of quelling family crises, is most brisk during times of imposed indolence - when employees of one of the Nickel Companies are on strike, or when the breadwinner is retired, and has nothing better to do than nit-pick and indulge in petty pecking about the inflated difference the husband and wife have "tolerated" in one another for forty years. A psychiatrist friend, Dr. Eric McLeod, states that the majority of his patients are married women whose family has grown to school age. They are usually well-educated and intelligent. They have most of the modern domestic conveniences at their disposal - the washer, dryer, freezer, dishwasher - you name it. And, according to him, it is precisely these amenities that form a major contribution to the boredom which they suffer, resulting in mental deterioration and illness. Unlike the helpmate of previous simple, directed agrarian society, the housewife today does not have to carry the clothes to the communal brook to do the laundry. She does not milk the cow, make her own soap, or candles, or thread, or cloth.

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The plethora of powered convenience has released her from drudgery. Our technology has emancipated her. Our technology has eliminated the challenge and arduous aspect of "keeping house". But it has also left a void which has been filled by very little.

As a society, we are suffering from our own inventiveness. Paradoxically, our intellectual prowess is contributing to our mental deterioration. But things are changing. Dr. John Farina, professor of Social Work at the University of Toronto, a participant in the above-mentioned conference feels that the "increased zest for learning, the proliferation of extension courses and night school courses... all attest to the intellectual activities which have become a primary leisure activity.

As a society, we are now achieving a comfortable material existence, with a degree of assurance and confidence.

I would suggest that we are also at the dawning of new age of humanism, where values reflecting the quality of life and environment will take a much greater pre-eminence over the industrial exigency and the political expediency.

In five years, the Community College has established itself as a Community Resource Centre. It provides a broad spectrum of extension program; in most cases reflecting the day programs. The Community College must of necessity expand this dimension of its existence. "The colleges must provide opportunities for higher education and cultural growth for all residents of the community; facilities must be directly related to the present and evolving needs of the community which it serves."

- Consider for example the needs of the Northern Ontario communities. In Sudbury, a city of 172,000 people, there is presently one swimming "pool" - and I say pool advisedly - it is 30' x 50'.

- In North-Eastern Ontario, with a total population of well over 500,000 there is not one half-hearted legitimate theatre or concert theatre. The National Philharmonic Orchestra will be playing in the local Arena (between hockey games on Thursday and Saturday) to a full house of 4000. The last time our community heard a symphony concert was in this very same Arena some four years ago.

- No self respecting repertory company wants to invade the hinterland because facilities are inadequate - as an example the Opera Company sends up their third string line-up along with an orchestra consisting of a piano duo.

I am sure that similar analogies could be drawn in any community outside the metropolitan areas served by a large urban centre. Because of the lack of facilities, it is impossible to attract excellent talent to carry out these programs. It was only through the efforts of Cambrian College in Sudbury that our community now has four musical performers of concert calibre. Until

Cambrian introduced a liberal arts musical program, there was not one such resource person from which the community could draw.

This situation is a marvellous opportunity for the Community Colleges to take up the challenge of providing programs in fine arts - in music, theatre, the dance - in painting, sculpture and pottery - programs which will transform the marginal cultural hinterland that now exists into a flowering garden. It is the type of program and facility which will encourage participation of the community, regenerate its vitality and viability, and improve its physical and mental well-being.

On October 8, 1971, Mr. Trudeau announced that the federal government had accepted all the recommendations of the Royal Commission on Bilingualism and Biculturalism as contained in Volume IV of its reports. The volume, if you recall, examined the whole question of cultural and ethnic pluralism in this country and the status of our various cultures and languages. A policy of multiculturalism within a bilingual framework is now accepted by the Government policy. Further to this, the government will "support and encourage the various cultures and ethnic groups to give structure to our society". The federal government, working co-operatively with provincial governments, is anxious and willing to promote in a monetary way, "creative encounters and interchanges among all Canadian cultural groups to full participation in Canadian society".

Is this not another golden opportunity for the community colleges to become involved through interaction with the community. Consider the value even to full time enrolment students: the interaction of students and adults of the community in producing a television program, or a stage presentation. Your own fine arts staff and students have much to learn in artistic achievement from the folk arts such as Ukrainian Easter Egg painting, German weaving, the Estonian folk dance, the Finnish gymnastic drills. A cultural wealth awaits those who would learn of the traditional musical forms of the various ethnic groups, their colourful customs, traditions, and costumes.

Think of this aspect in relation to the added dimension of the college as a community centre. Let's not minimize the magnitude of the contribution the college could make to the vitality of its community by fostering and actively pursuing this facet of our national development.

In the past two years, much has been said and done about environmental pollution. Great concern has been voiced, and strong action taken to stop the burning of garbage, and autumn leaves, of preventing the dumping of industrial wastes into our rivers and lakes, and cleaning up the privies at the summer cottage. The governments have even set up departments to deal with environments, and passed smoke abatement by-laws, anti-noise by-laws and so on. Even in Sudbury we have an air-pollution monitor which tells you which way the wind is not blowing - and once in a while you get an idea of how bad things can be when the wind changes and the monitor registers 641.

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But very little has been said about our visual environment, and the pollution thereof. And possibly for good reason. With water pollution, one can specifically state: the water shall not contain such and such a percentage of mercury, or bacteria, or phosphates or human waste solids. With air pollution, percentages or micron measurements of SO_2, CO_2 and various particles of noxious matters set a standard differentiating good clean air and smog. But with visual pollution, you must depend upon aesthetic judgment and acceptability, and herein lies the problem. To one person, the corner store plastered with a myriad of signs peddling everything from Schweppe tonic water to Templeton's TRC's is shrugged off with a "so what". To another person it is an aesthetic affront and in horribly bad taste.

If you are not already aware of the abject poverty of our visual environment, walk down Queen Street west - visit almost any department store and have a careful, objective look at the aesthetically revolting design being pawned off on you the consumer. And the average consumer buys because he does not know better.

A real challenge exists that should be taken up by the college to develop in the people of this country an aesthetic appreciation of good design in every facet of their daily lives - the buildings which surround them and in which they work and play; the streets down which they walk - the furniture upon which they sit, even the ashtrays into which they butt their cigarettes that pollute our air and ruin their health. It is a question of education - of mass education that must permeate our communities. It can be done! Look at the Scandinavian countries!

The program at Sheridan College is a step in the right direction - but when you consider the magnitude of the problem its such a small step. Our fellow beings are becoming more aware of their environment, but they need leadership, coddling and cadjolling. And who is in a better position than the community colleges to take on this apostolate of aesthetic awareness. Through active programs teaching good design, through community presentations, through the Communications programs, the Audio-Visual programs, the Visual Arts programs - the College is the best example with which the community has a continuing contact. The first big step can be taken surreptitiously, gently, or forcefully assisted by the Community College.

The Colleges are actually an extension of the community. They have been created to fill a growing inadequacy of skilled technicians and technologists. They have also the important role to play in developing and preserving creative and intellectual human resources, and making their total community a vital, viable, and structured society.

THE COLLEGE AS A COMMUNITY CENTRE
by K.E. Cunningham

Our Conference Chariman, Mr. S.T. Orlowski, has asked me to prepare a brief talk of from three to five minutes that will outline my direct concerns and areas of expertise within the Community College system. As Director of Student Affairs at The Confederation College of Applied Arts and Technology in Thunder Bay, my responsibilities are in the Registrarial, Counselling, Health Services, Student Awards and Placement, High School Liaison and general College recruiting areas, as well as publication of the College calendar, program brochures and other publications of a student recruitment nature. I also work closely with the College Council of Students and the various student groups to assist in the execution of their policies and activity programs.

We at Confederation College have always felt that the community not only should be, but must be involved in all aspects of the College. Within my own area, the community is encouraged to participate in our facilities and services.

One of these services is Career Counselling and Diagnostic Testing which is intended to aid individuals in making the best decision for themselves with regard to future vocation or education. This service is available to anyone in the community, as is personal counselling on an appointment or referral basis. We also provide evening counselling services for Extension students and the community at large.

Our Student Awards Officer and staff are available to assist members of the community in ascertaining what financial aids are available to facilitate their vocational or educational choice.

Another area of community involvement is of course within the Registrarial function.

This is normally the first area of contact with the community seeking information concerning not only our College but other Community Colleges, as well as vocational and educational information at all levels. Our Admissions and Information sections, as well as the Registrar's office, are usually the beginning flow chart for interested members of the community.

Our Health Services normally do not provide the community with clinical services; however, the members of the Health Service team may be involved in community health education, conducting of seminars, workshops and other mental and physical health programs, not only for the College personnel but for the Community itself.

I intend to deal more completely with the aforementioned areas which are my

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direct responsibilities. However, I would like to say that generally Community Colleges should involve the community in many of their programs where field work takes place at the College. I am thinking of such areas as nursery school operations, recreational programs, keep fit programs, arts and crafts, theatre arts, communication arts, film production, journalism, marketing and sales programs, hotel resort and restaurant programs, to name only a few of the College offerings.

Similarly, our various auditoriums, seminar rooms, classrooms and some of our laboratories should be designed for joint use of the community, as well as the full-time or part-time student body.

Community organizations, clubs, associations, civic departments, professional associations and institutions and, generally speaking, all groups within the community, should be encouraged to use the physical facilities as well as the resource people within the College for any of their organizational activities. Last year at our College in excess of 30 groups availed themselves of our College facilities.

As well as a meeting place for groups of this nature, the College should also provide cultural programs such as art displays, craft work, theatre presentations, concerts, guest lecturers and so on. There should also be an opportunity for the community to utilize College facilities for social functions as well as the aforementioned cultural, recreational and athletic activities and generally all activities of an avocational nature not sufficiently provided for by other segments of the community.

With regard to my own special areas of responsibility with the Student Affairs Division, the following are some points to be considered when planning College facilities:

Registrarial, Admissions and Information Area

The office of the Registrar/Admissions Officer/Information Officer or individuals responsible for inquiries concerning the College, its programs and facilities, should be situated on the main floor, close to the reception area.

There should be easy access to the Information area. Displays of calendars, College brochures and information concerning the College and its facilities should be easily available to the public in the waiting room or lounge area from which members of the Registrarial staff may serve the informational needs of the public.

The offices of the Registrar, the Admissions Officer and the Information Officer should be private and soundproof in view of some disclosures which may be made to these individuals at this point of time. It is, however, not as important to have the Registrarial offices as soundproof as is required in the Counselling area.

The Registrar's area should have an informal atmosphere and a sufficiently large waiting room area that could be a combined lounge from which individuals could proceed to any of the student services areas. The general decor and facilities should be warm and comfortable. They must not, however, be austere or lavish.

Counselling Area

The Counselling area should be readily accessible to the Registrar's area so that individuals, whether they be students or citizens from the community, may have easy access to it from the Registrarial area.

The most important aspect of the physical setting in the Counselling area is that of privacy. Although many of the conversations, discussions and interviews that the counsellee may have with the counsellor are not necessarily private or personal, a feeling of security must be engendered in the counsellee so that when a personal or private matter is disclosed, the individual will feel comfortable and secure that no one except the counsellor will hear what is being said.

Privacy must not only be of an auditory nature but there must also be visual privacy. Similarly, the location of the counselling area and offices must be separate from faculty and administration. It cannot be over-emphasized sufficiently that nothing limits the counselling relationship more quickly than knowing that others are able to hear or observe what is being said or taking place.

The Counselling interview area should, if at all possible, have a window and not be merely cubicles or boxes with four walls. Ideally, therefore, counselling offices should be situated along the main supporting wall of the building, with a window in each office area.

The offices themselves should be warm and informal with easy chairs, a coffee table and almost a living room setting, rather than an office setting. The counsellor's desk, if a desk is used, should not be located in such a way that it is in between the counsellor and the counsellee. The lighting within the interview area should not be of the overhead fluorescent type unless there is some type of volume light control switch within the individual offices. I have often heard counsellees complain of the "third degree" overhead-type lighting in counselling offices. The counselling office preferably should contain table lamps or floor lamps or the volume control type of lighting that is not fluorescent but indirect.

The Counselling office should also contain provisions for audio taping and video taping. The counsellee, of course, must agree to the taping or audio visual recording of the interview. However, the most recent innovation, coming out of research and studies being conducted in universities and colleges at the masters' and doctoral counselling level, is what is known as micro-counselling, which includes audio and visual recordings and indicates tremendous

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advantages to be gained from this type of information, not only to assist the counsellee but to assist the counsellor from a standpoint of professional development as well as evaluation and accountability.

The lounge area from which the individual proceeds to the interview area must have visual privacy from peers, faculty and administration. It must also be a comfortable place to sit and gather and should contain brochures, pamphlets, reading material, arm chairs, couches, coffee tables, ash trays, coffee dispenser and all elements that provide a comfortable, friendly atmosphere. Once again, lighting should not be of the overhead fluorescent style, but should consist of floor and table lamps.

In order to add to the decor and feeling of well-being, there should be paintings, photographs, pieces of sculpture or craft work, plants, ferns and so on.

The preceding have been some of my thoughts concerning the College as a Community Centre, with specific reference to my own areas of responsibility. They are by no means all-inclusive but I hope they will provide a departure point for discussion.

It is my feeling the College students, faculty, staff and administration, as well as the College community, should be involved at the planning stage in the construction of a Community College. This Design Workshop itself, I think, is a major step in the right direction. It is also my feeling that the majority of the Community Colleges in Ontario have endeavoured to apply the concept of community involvement.

THE COLLEGE AS A COMMUNITY WORKSHOP
by D. Capling

The college does not usually qualify as a community centre, in its geographical meaning. The college is a community centre, to the extent that the community believes its interests are served by the college.

How can the college better serve community interests? Mere proliferation of college centres is no guarantee of a college more responsive to the community. The college must participate in the community. There are at least two strategies for achieving this participation: the college as a single unit can identify and respond to community trends and current issues and concerns. This approach is not practical unless the college is willing to greatly develop its extension staff, solve the internal difficulties in getting extension-regular program co-operation, and develop its Board of Governors to a highly sophisticated sense of social consciousness. A more feasible alternative, is to emphasize the community outreach of the existing programs in the college.

Each of these established programs represents a developed unit of educational energy, composed of concerned faculty, material resources, full-time students, and advisory bodies, which could be effectively focussed on community outreach, given some administrative and architectural re-thinking.

A key administrative decision would be to allocate a proportion of teaching hours to each program, to be employed in community education. This would encourage faculty members so inclined, to commit themselves more fully to community education.

If the programs succeed in making more effective contact with the community, the college will need to be more physically-receptive to community participation. Some child care facilities should be available within the institution. Better provision should be made for the handicapped to get in and around the building. In dealing with older learners, some concentration on change in values, habits, and attitudes is often necessary. One of the best evnironments for conducting such intense education, is a residential education setting. Colleges should have easier access to such facilities. Cafeterias should have some areas of refu from ear-splitting broadcasting which prevents conversation below the level a shout!

The foregoing are physical changes which would render the college more amenable to the total community. They are not the physical changes which would motivate the community to participate in the college.

A major proposal is for the development of college facilities which would attract the community to recognize and utilize each of the college programs. This proposal advocates the designation of a large workshop are for those programs where a decision to participate actively in the community has been made. Each

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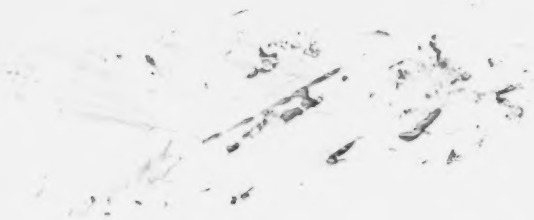
pate actively in the community has been made. Each
of these workshops should be designed by those concerned. General specifications should include provision for seating for forty or fifty people. The workshop seating should be of a lounge nature, and immediately portable. The workshop should allow the seating to be changed from small discussion to plenary meeting. Project areas, work tables, and display facilities should be included. Faculty should be available within this workshop rather than in some obscure cubicle. The workshop should attract those interested in the program, because it represents the program in visual, resource, and organizational ways. The workshop should be used for regular classes of the program, as well as for meetings, projects, conferences, week-end and evening sessions, and so on. When not employed for classes, the workshop will continue to be an informal centre for those interested in the program or working on related projects.

The idea has been tested in at least one college, and though not fully exploited, has had good results. An additional benefit is to be derived from the improvement of daytime student morale and program cohesion, where such a facility is developed.

People of all ages feel more involved in an institution which allows them to identify their interests and work together with those of similar persuasion. As a community has many centres of interest, so should a community college.



SUMMARY OF GROUP MEETING 7: THE COLLEGE AS A COMMUNITY CENTRE
by J.H. Drysdale

The following is an outline of the discussions which followed the introductory remarks. Emphasis was placed upon the need for the Community College to be a place for something to happen. If the place is there, and leadership and resource people are available, something will happen whether it is planned or not. It is essential, however, that the resource person in the college, i.e. the faculty, the administration and students be the catalysts for the natural development of a community centre.

Consideration as to what constitutes a faculty teaching load, should bear in mind the need for community involvement in the development of a community centre.

The need to define what a community centre really is, was uppermost in the minds of many, although there was no doubt that the college as community centre was the community educational centre, the community resource centre, and where an active recreational facility was not available in the area the college might well become a community recreational centre.

The need to continuously keep the faculty and administration in touch with the community was emphasized. It was appreciated that with particular programs of study, there were associated community advisory committees, but it was for those aspects outside of these programs of study, that the need was expressed. I.E. the need for a community advisory committee, separate from the program advisory committees, might be considered. Perhaps the Board of Governors might expand their role in this regard.

The college representatives did not accept the fact that the college as a community centre having evolved rather than having been planned was an indication of poor administration. The community centre should evolve naturally within the community, to meet all aspects of community requirements.

The need for the college to even become a community centre was challenged.

Several rebuttals to this challenge were to the effect that the college should play a psychological and social role in the community and aggressively influence what is going on in the community for the socio economic development of the community.

The college is not only a community centre, the college offers a vast array of programs, facilities and staff for community use. It should be the responsibility of the program groups, i.e. advisory committees comprised of student, faculty and local persons, to determine the community interests and the needs.

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3.7: THE COLLEGE AS A COMMUNITY CENTRE

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It was recommended that colleges should provide services to the community and not act in a professional consulting role. In many instances, the community could use the college services and facilities without college staff assistance.

In concluding the workshop, it was apparent that the Colleges of Applied Arts and Technology were developing as community centres, but guidelines to ensure complete development of the college facilitiy as a community centre, without restricting the natural development of the college in this regard, were possible.

On the following page is a copy of the Northern College of Applied Arts and Technology Facility Use Agreement for the campuses of Haileybury, Kirkland Lake and Porcupine.

NORTHERN COLLEGE OF APPLIED ARTS AND TECHNOLOGY
Head Office: 155 Pine Street South, Timmins, Ontario.
Telephone: 264-9413

FACILITY USE AGREEMENT

Campus: Haileybury O Kirkland Lake O Porcupine O

1. Full name and address of applicant:
(Name).....
(Street) ..... (Telephone) .....
(Town) .....(Province) .....

2. If application is for an organization, give full name and address:
.....
.....

3. Nature of function: .....
.....

4. Date (s) of function: ..... Time and duration: .....
(Rehearsals, etc., to be included) ....
....
....

5. FACILITIES REQUIRED

		RENTAL RATES Weekday	Saturday; Sunday
Auditorium (500 seats)	O	40.00	50.00
(Rehearsals)	O	15.00	20.00
Gymnasium	O	15.00	15.00
(Furniture set-up - 250)	O	20.00	20.00
-over 250)	O	+ 10.00	+ 10.00
Lecture Theatre(s) (100 seats)	O	10.00	10.00
Board Room	O	5.00	5.00
Classroom(s) - 25 & under	O	3.00/hr.	3.00/hr.
- 25 & over	O	4.00/hr.	4.00/hr.
Cafeteria (300 seats Dinner	O	15.00	20.00
Dance	O	30.00	50.00

Please indicate type of meal to be served:
Full course: O Buffet: O Refreshments only: O

All food and refreshment requirements must be arranged directly with the College Catering Service.

Coat-check Room O * (A College student must be used for an attendant)

6. Estimated number of persons to
(Must not exceed capacity of r
*(If attendance is over 200, ar
attendants - minimum of 2.)

7. *If ushers are required, arrange

8. The following college equipment
arrangements must be made to p
(These services may be provide
technician must be in attendanc
Sound Equipment O
Projector O
Screen O

9a. What equipment do you propose
(Please indicate:)

9b. What services, if any, will be
.....
.....

Note: * - Payment for student servic
the student through the ca
Please remit invoice paym

REGULATIONS:

1. If alcoholic beverages are to be
Occasion Permit" issued by the
thereon complied with.

2. Smoking or refreshments are not
or classrooms.

3. All backdrops, scenery or other
of nails, screwnails or other fas
part of the facilities.

4. It is understood that any damage
will be your responsibility and r

5. The applicant must ensure functi

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(Date)

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(Date)

IED ARTS AND TECHNOLOGY
t South, Timmins, Ontario.

AGREEMENT

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..... Time and duration: .....
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RENTAL RATES

	Weekday	Saturday: Sunday
	40.00	50.00
	15.00	20.00
	15.00	15.00
	20.00	20.00
	+ 10.00	+ 10.00
	10.00	10.00
	5.00	5.00
	3.00/hr.	3.00/hr.
	4.00/hr.	4.00/hr.
	15.00	20.00
	30.00	50.00

served:
O Refreshments only: O

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llege student must be used for an attendant)

6. Estimated number of persons to be in attendance: .....
(Must not exceed capacity of rented facility.)
*(If attendance is over 200, arrangements will be made for student parking attendants - minimum of 2.)

7. *If ushers are required, arrangements may be made to use college students.

8. The following college equipment is available and should it be required, arrangements must be made to pay for the services of a college technician.

(These services may be provided by your own personnel, but the college technician must be in attendance.) Please indicate:

Sound Equipment	O	Spot Lights	O
Projector	O	Lighting dimmer controls	O
Screen	O		

9a. What equipment do you propose to provide? .....
(Please indicate:) .....
.....

9b. What services, if any, will be required for your own equipment?
.....
.....

Note: * - Payment for student services is to be made directly by the group to the student through the campus administration office.
Please remit invoice payments to Northern College Head Office.

REGULATIONS:

1. If alcoholic beverages are to be served, they must be covered by a "Special Occasion Permit" issued by the Ontario Liquor Control Board, and all regulations thereon complied with.

2. Smoking or refreshments are not permitted in the auditorium, lecture theatres or classrooms.

3. All backdrops, scenery or other equipment used, is to be placed without the use of nails, screwnails or other fastenings which may cause damage or mark any part of the facilities.

4. It is understood that any damage to college property resulting from this function will be your responsibility and repair costs will be assessed accordingly.

5. The applicant must ensure function is conducted in an orderly manner.

....
(Date) (Signature of applicant)

....
(Date) (Signature of dean)

CAMPUS OF TOMORROW
by K. Koyama

Wheels on Dinosaurs

George Brown College pioneered in the idea of bringing the classroom to the local community. Two years ago, we built a specially designed trailer, consisting of a classroom, individual study area and an office. This unit moves at regular intervals to various parts of Toronto. The purpose of the Trailer is threefold:

1. A communications link between the community and the College. Often this is the first contact many people have with an educational institution since elementary school days.

2. Identification of unfulfilled needs. These needs where possible are translated into active programs either in the Mobile Unit or at one of the College Campuses.

3. Co-operation with agencies, government departments and citizen groups. In the case of citizen groups, we help these self-help organizations to develop and plan programs and projects. In addition, we provide counselling service to the groups.

All these projects received a great deal of attention and publicity from the press, television and radio. It has also helped to place the presence and service of George Brown College in the minds of the people of Toronto. Someone remarked that they saw George Brown College travelling along Bloor Street at 30 mph.

Despite past successes, the time is approaching when we must reconsider future use of the Mobile Unit. This unit has been an experimental one in two ways: first as a communications tool in itself; second as a centre for community program experiments. The community program aspect continues to play an important role for the College in the downtown setting. The communications tool experiment has perhaps run its course and we must at this point seek new instruments.

From our experience with this kind of innovation, I should like to comment on some lessons learned over the past two years. An unnamed wag once remarked, some people's idea of progress is to put wheels on dinosaurs. I am aware that it is fashionable today to take apart sacred cows. Further, one of present day pre-occupations is criticism, mainly because it comes easy. Like many others before me, I have fallen into the self-same elephant hole. My hope, however, is that for some the criticisms are not old hat or merely a destructive

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exercise, but rather that they provide some kind of insight into the problem of education.

We are living in an age in which established institutions have been visited by the horsemen of the apocalypse. The churches, at least the downtown core ones, have died. The once cherished social agencies are desperately trying to discover a valid rationale for their continuing existence. We are now witnessing a similar assault on our educational institutions.

This assault on education originates from much publicized reports of spiralling costs of education and the growing dissatisfaction with the work of educators at all levels. But perhaps an even more damning attack comes from the students. They feel that they are being ground out or more precisely stamped out through a maze of incomprehensible systems and are themselves being bureaucratized in the process. I might add that bureaucracy is a necessary evil in that we have not devised a better way of dealing with work, but to bureaucratize an individual is unforgiveable.

During this conference, we have heard and seen requests for and examples of magnificent structures - resource centres, $250,000 videotape systems and edifices for the greater glory etc. etc. I should like to submit that all these gargantuan efforts only aid and abet those forces now at work to destroy the educational institutions. We would surely follow the churches and social agencies to the graveyard.

The history of education and educational innovations, it seems to me, is littered with seductions by mistresses under a variety of guises. To name a few - permissiveness, free schools, ungraded classrooms, and the open plan. And more recently, cross-country buses, trailers and storefront operations.

The difficulty with these experiments is that they are in part an opposition response to a system that is not functional. An innovation based on a failed system has little chance of success. We in the West are brain-washed by the R.D. Lang notion of several generation entrenchment. Further, the Socratic dialectic and the Aristotelian mean have largely governed our thinking in attempting to solve problems. In short we are making an assumption that the basic core of the system is healthy and alive in Toronto. What if this were not the case? If it were not the case, why is there just a possibility that it might follow the churches and social agencies? A decade ago churchmen and social workers were certain that no such fate awaited them.

To return to the magnificent structures educators, architects, and engineers develop for us, it seems to me, that it is precisely this creation of ultra-modern learning areas that really restricts the world view development of education. For example when we introduced the open school concept I think we tore down the wrong wall. Earlier this month, when I visited Japan, I had an opportunity

to visit several of their schools. By our standards, their classrooms would be immediately condemned. Perhaps because of this condition, the schools encourage very extensive use of national parks, woodland, mountaintops, factories and cities as their classroom. Very young children often travel whole days by train or bus to reach a particular classroom. By the way without benefit of hordes of volunteer parents to supervise.

One of the current best sellers is a book called Future Shock. This is a frightening book in many ways, but the message has been misplaced. The emphasis should have been on shock we suffer more, much more from the past. What do I mean by this. The best example is that of the plight of the poor in our cities. Some of these people are able to point proudly to a history of at least three or four generations of public assistance. They seem unable to break the chain. Try as they might, the present lifestyle is too ingrained. As Lang puts it, it is like genetics. Another example should serve. Have you noticed how city dwellers on their occasional visits to the country return laden with trees, shrubs, weeds and any other living plant that is green? This they proceed to plant willy-nilly. I once had a neighbour who converted a small 5 x 8 foot front yard into a veritable forest. Happily within a week, the whole mess died.

Poor or rich, we have an awful time unliving our past. We are so blinded by overwhelming past events to truly come to grips with the present. I should hasten to add that not all of the past is bad, much of the good things emerged and are still emerging from past experiences.

In summary, what I have deplored in current educational practices is our thinking base. To conclude the image, the dinosaur remains only as a fossil and the wheel need not be re-invented. Unless we alter our present direction of massive expenditures in putting wheels on dinosaurs, we lose in the process our credibility and ensure a secure position for Malcolm Muggeridge's Liberal Death Wish. It is a tragedy of the times that very little of the philosophy of Living and Learning moved out of the pages of the document into the fossilized classroom.

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CAMPUS OF TOMORROW - "M.I.L.E." - Z. Fisher

"M.I.L.E." is an acronym for Seneca's Mobile Intensive Learning Experience

Programme History - 1970

In the spring months of 1970, 60 Seneca College students and 8 teaching faculty inititated the first phase of a multi-staged educational experiment believed to be unique: through travelling to different parts of Eastern Canada, students were able to study en route curricula developed especially for the MILE. Each student was enrolled for credit in two semester subjects. Each subject was designed to make use of on-the-spot learning while journeying through Quebec and each of the Maritime Provinces.

The basic aim of the programme was to give faculty and students a unique, out-of-the classroom opportunity to become acquainted in depth with other Canadians in a variety of environments, with a view to developing a more mature understanding of Canada - its citizens and the lands they inhabit.

To accomplish this task, the MILE became mobile for 29 days, and travelled 4,700 miles.

Programme History - 1971

With the continuation of the MILE programme in 1971, students have now had the unique opportunity to learn first-hand the significance of Canada's motto; within a twelve-month period, Senecans have studied Canada from sea to sea.

MILE '71 expanded west and north, across Ontario and the Prairies into the far reaches of the Arctic, over the western cordillera to Canada's Pacific shores.

As before, the MILE set out to experience and to study within a predefined academic framework what it means to be a Canadian. To these ends, an itinerary was developed and refined to permit diversification of interests, such that at one time during MILE '71, no fewer than four groups of MILERS were simultaneously progressing along quite independent paths.

An increase of interest in the MILE programme was evidenced by the growth in enrollment to total of 96 students. It is felt that even more might have maintained their initial enthusiasm, but records indicate that students were refunded their initial deposits when they were obliged to withdraw from the programme for reasons, largely financial.

In 1971, the average total mileage travelled by a MILER, in 36 days, was in excess of 8,500 miles.

BUILDING INDUSTRY IN TRANSITION

by D.C. Patterson

There is a great deal being written and spoken of the Building Industry in Transition. The Building Industry has always been in transition - the difference today is that, the patron, the guy who pays the bills is in confusion about what the building industry has to offer and the method of packaging.

In the past, the owner was content to let his architect and the contractor make decisions for him. Now with the requirement for more sophisticated buildings, more input by the owner, he is not allowed to stand idly by, paying the bills, and leave it to the others on the team. The owner now has a real and continuing involvement in the process of building from conception to completion. Inexperience in this new role as one of the decision makers has lead to some of the confusion. In the case of Community Colleges, inexperience with the new building form, where there is no precedence, adds to the confusion.

The building industry has not made it any easier. The owner is now offered dozens of alternative methods of construction. Management, development, cost plus, stipulated sum, with all of the variations and combinations thereof. There seem to be as many ways of getting from proposal to completion as there are contractors. Each one claims to have the magic formula and old practioners of the art are asking "What ever happened to the good old Stipulated Sum?" It is still going strong and given an owner who knows what he wants and can afford what he wants, an architect who can translate those requirements into a set of documents that clearly fill the bill, a good contractor, and the full time necessary for the due process of construction and you can't beat it.

But some changes have taken place that undermine the full effective use of stipulated sum. The new emphasis is on specialization. The contractor no longer builds - he organizes and manages - the architect is being asked to pursue his fortes, planning, design and aesthetics. This has left a vacuum. The subtrades, the whole job is undertaken subtrades because the contractor is so busy managing, are left to build the project. If they arrive on time and perform on schedule, the contractor is happy. If they do a good looking job the architect is happy. The quality of the job and good building practice is left to the discretion of the sub trade. That the contractor has no control over the subtrade is most apparent when it comes to Change Orders. When an owner is confronted with a ridiculous price for a change in the contract the contractor in his role of manager merely states "That's the best I could do with the subs. It was take it or leave it." The contractor seems to have lost control over the job and the owner is paying for it.

The Building Industry is in Transition and so it should be. It really should be evolving. It is this evolution that has placed the industry in the strong position it is today but in a search for new ways we seem to be discarding the better aspects of the old ways. The individual initiatives that resulted in collective progress are being lost in the avalanche of fast talk and emphasis on systems and methods which are weakening the industry.

FLEXIBILITY -

by H. Rawso

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FLEXIBILITY - FOR WHAT?

by H. Rawson

Colleges are uncertain of long range patterns of enrolment in various programs. In addition, they find it difficult to predict class sizes. Recognizing that it is impossible to consider all the variables that may be encountered, or to plan in detail for all contingencies, it is still incumbent upon Colleges to make every effort to construct flexible spaces.

Given that set of conditions, how would architects and engineers propose to satisfy the following needs:

a) The need to plan academic areas that can be modified easily to accommodate sections that may range from six to forty-six students.

b) The need to provide for accessibility of services and utilities for additional or modified spaces.

c) The need to provide open-ended buildings which can easily be enlarged.

d) The need to provide instructional spaces that may be altered with respect to function. If form follows function, to what extent does form restrict function?

If time permits I should like to hear Bob Booth and Charles Simon comment upon the value of certain traditional methods of providing flexibility, such as: open-plan classrooms; folding or movable partitions, "packaged" mechanical systems; demountable partitions; "plug-in" instructional equipment.

The question really is: "Has the additional cost of providing flexibility been warranted in terms of the encountered need to modify the space."

Finally, to what extent does the organization (departmental) structuring of the college limit flexibility? If rooms are clustered according to function, what happens to the structure of the college hierarchy?

FLEXIBILITY - FOR WHAT?
by R.L. Booth

My definition of the term "flexibility", within the context we are considering today, is: "The capability of an enclosed space to be used for several purposes without significant loss of efficiency in any of the uses to which it is put." Presumably in today's educational buildings, the greater the space flexibility, the better the design has been.

"Flexibility" is one of those words which, in a different context, can mean something quite different. If one uses this word to describe the physical characteristics of a building structure, the movement of the structural framework is implied. Too much structural flexibility can reduce the durability and performance of the structure thereby limiting the use to which its enclosed spaces can be put.

Since my experience has been in the structural analysis and design of building frames, I would like to pursue this matter of "space flexibility" as it relates to structural design. Almost continuously over the past decade, Educators and Architects, often supported by Engineers , have been the leading proponents for space flexibility. Sometimes, and recently it seems to an increasing degree, the solution chosen for space flexibility has been to provide larger and larger distances between permanent, vertical "space interrupters" such as walls and columns. This reduction in the number of permanent vertical members has tended to increase vertical and horizontal structural flexibility.

At the same time improvements in the quality of the available structural materials and improvements in our ability to analyze structural behaviour accurately, has led to the adoption of significantly higher working stresses in structural members. While the spans have been increasing, the sizes of members necessary to support loads on those spans has been reducing. Again greater structural flexibility has resulted. In order to control this structural flexibility, it has been necessary to spend much time and considerable money on special details involving increased amounts of field welding, vibration dampers, and in some cases deliberate use of heavier weight materials than the strength design alone require.

It is my view that education and space planners are attaching far too much importance to the solution for flexibility which is solely dependent upon long clear spans. I say such space costs more structurally, and is inherently more prone to uncomfortable structural movements.

There is certainly virtue in providing for flexibility in the use of spaces. But we should look beyond the overly simplified solution of eliminating columns and walls at the expense of economy and structural performance. Let us look instead towards space layouts which, by their locations within the building,

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To sum up, I feel there is a need to define the term "flexibility" in a more detailed and comprehensive way. By looking more deeply at all aspects of present and future space-use requirements, it should be possible to weigh proposed solutions against building performance and cost. In the "weighing up" process, the contribution of all disciplines is essential. Indeed, only by including all disciplines - design, construction, user - can the most appropriate solution be identified.

SUMMARY OF GROUP MEETING 10: FLEXIBILITY - FOR WHAT?
by D.E. Light

The moderator opened the meeting by reviewing the topic for discussion and indicated that perhaps it could be considered from two specific viewpoints. Firstly, one could examine the flexibility of the institutions as a whole to respond to varying needs within the community, and secondly, given a defined space within the college, what provisions could be made to make it as flexible as possible to answer the demands of the educational process.

After these comments, the moderator called upon the panelists to make brief statements regarding their thoughts on the subject matter.

Mr. H. Rawson:

"Colleges are uncertain of long-range patterns of enrolment in various programs. In addition, they find it difficult to predict class sizes. Recognizing that it is impossible to consider all the variables that may be encountered or to plan in detail for all contingencies, it is still encumbent upon colleges to make every effort to construct flexible spaces.

I would like to pose a series of questions, hopefully to stimulate responses from my fellow panelists and the audience. First, specifically to architects and engineers - How would you answer these needs:

(a) The need to plan academic areas that can be modified easily to accommodate sections that may range from 6 to 46 students.

(b) The need to provide for accessibility of services and utilities for additional or modified spaces.

(c) The need to provide open-ended buildings which can easily be enlarged.

(d) The need to provide instructional spaces that may be altered with respect to function. If form follows function, to what extent does form restrict function?

And more generally:

1. Is there value in the traditional methods of providing flexibility such as open plan classrooms, folding or moveable partitions, packaged mechanical systems, the multiple partitions, plug-in instructional equipment?

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Mr. Simon then went on to explore
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3. - and finally - Has the additional cost of providing flexibility been warranted in terms of the encountered need to modify the space?"

Mr. C. Simon:

Mr. Simon indicated that there was certainly a legitimate call for flexibility in our buildings, but he cautioned the audience of the dangers of the utilization of flexibility as a fad.

Mr. Simon considered that the educator must clarify the need for flexibility for the architect and the engineer. Is the educator concerned with flexibility from a viewpoint of change in educational philosophy, in educational techniques in educational subjects, in administrative organizations or in what?

In the case of flexibility, how frequently do we contemplate change? Is it something that will occur several times a day, a week, a year or decade? In each of these instances of course, the physical response will be totally different.

Mr. Simon then went on to explore some of the types of flexibility; he considered the physical type of flexibility concerned with service systems, structural systems or by the utilization of additions. In the instance of the physical structure, Mr. Simon pointed out that flexibility could be achieved through mobility, i.e. the utilization of multiple structures air supported, moving parts or kinetic architecture, trailers and portables. Another type of flexibility of concern is in the administrative area; he stressed that this could well be the most important kind of flexibility which is required.

In summary, Mr. Simon pointed out that planning is a continuing process, not a static model or a render drawing and that it should be a reflection of the cyclic and continuing nature of program building, feed-back studies, and re-evaluation.

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The responses, questions and comments from the floor were essentially reflections of the material provided by the panelists. In particular, considerable time was spent with regard to the utilization of air structures in the planning of a college. A number of representatives from Humber presented to the committee the results to date of the operation of the air structure which is being used for an athletic facility at this particular college. It was pointed out the major concern with the use of the air structure is in regard to the restrictive elements imposed by the Fire Marshal's Office. An education administrator expressed some concern with perhaps the undue emphasis on flexibility in a given college. He stressed that the essential operation of the college is a reflection of the relationship between faculty and students and that this can be done effectively in a wide range of types of spaces, and perhaps the only need is to provide in a given building rooms of different sizes.

A question posed to Mr. Simon stimulated considerable discussion. This question was essentially - "Should the colleges provide portable buildings for a limited period of time and perhaps relocate such buildings as the need arises in a given community?" This suggestion received considerable support from the audience in that it was thought, in the case of today's society, that portables could be the ultimate answer.

Considerable concern was expressed by a number of participants from the audience with regard to the lack of relationship between the physical planning and the educational philosophy as it is now developing. For example, the self-teaching or self-learning concept is being used at many institutions and appears to certainly be an effective mode of operation. This particular type of education does not place expensive demands upon flexibility in that almost any type of space is satisfactory, assuming appropriate electrical connections.

The meeting considered the means by which flexibility can be achieved in the planning process. It was stressed by numerous of the audience that participation from all segments of the college - student, faculty and administration - must be achieved. However, it was pointed out that somewhere along the line there must be an effective decision-making process and accountability and responsibility assumed by the administration for the planning.